

# COMMERCE, JUSTICE, SCIENCE, AND RELATED AGENCIES APPROPRIATIONS FOR 2017

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## HEARINGS BEFORE A SUBCOMMITTEE OF THE COMMITTEE ON APPROPRIATIONS HOUSE OF REPRESENTATIVES ONE HUNDRED FOURTEENTH CONGRESS SECOND SESSION

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### PART 7 STATEMENTS OF INTERESTED INDIVIDUALS AND ORGANIZATIONS



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**Monterey Bay  
Aquarium**

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Aimee David  
Ocean Conservation Policy Director

**OUTSIDE WITNESS TESTIMONY FOR THE RECORD FROM  
MONTEREY BAY AQUARIUM**

**TO: SUBCOMMITTEE ON COMMERCE, JUSTICE, SCIENCE, AND RELATED  
AGENCIES**

**RE: NOAA MARINE DEBRIS AND EDUCATION PROGRAMS**

March 30, 2016

The Honorable John Culberson  
Chairman  
Subcommittee on Commerce, Justice, Science, and Related Agencies  
U.S. House Committee on Appropriations

The Honorable Michael M. Honda  
Acting Ranking Member  
Subcommittee on Commerce, Justice, Science, and Related Agencies  
U.S. House Committee on Appropriations

Dear Chairman Culberson and Ranking Member Honda,

On behalf of the Monterey Bay Aquarium, I am writing to express our strong support for the Marine Debris Program at the National Oceanic and Atmospheric Administration (NOAA). We respectfully request that you make it a funding priority to include **\$8,000,000 for the NOAA Marine Debris Program** in the FY 2017 Commerce, Justice, Science, and Related Agencies (CJS) appropriations bill.

Our ocean is at increasing risk from growing levels of plastic pollution. Studies estimate that an average of eight million metric tons of plastic enter the global ocean each year. Unless we curb the flow, scientists estimate that there could be one ton of plastic for every three tons of fish in the ocean by 2025, posing a risk to water quality, wildlife and human health. Ocean plastic pollution is an issue that is especially relevant to our millions of visitors—and to Californians in general, many of whom have taken action to clean up local beaches and reduce the use of plastic bags in grocery stores.



**Monterey Bay  
Aquarium**

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Aimee David  
Ocean Conservation Policy Director

For these reasons, we support strengthening the NOAA Marine Debris Program, which offers competitive grants for aquariums and others to work with federal, state, and local partners on marine debris education and reduction projects. Monterey Bay Aquarium has received \$52,306 from this program for our Ocean Plastic Pollution Summit for Teachers. Over 100 pre-K to 12<sup>th</sup> grade teachers from throughout California have participated in the Summit and follow-up activities, learning how to use the issue of ocean plastic pollution to engage their students in marine conservation and science.

We also want to join the Association for Zoos and Aquariums in urging your support for three additional NOAA programs. **Specifically, we request that you include \$8,000,000 for the Environmental Literacy Grants Program, \$12,000,000 for the Bay, Watershed, Education and Training Program, and \$4,000,000 for the John H. Prescott Marine Mammal Rescue Assistance Grant Program** in the FY 2017 CJS bill.

Thank you for your ongoing leadership in enhancing ocean health and vibrant coastal communities nationwide.

Sincerely,

A handwritten signature in black ink, appearing to read "Aimee David".

Aimee David  
Ocean Conservation Policy Director





## Internet Association

March 18, 2016

The Honorable John Culberson  
Chairman, Subcommittee on Commerce, Justice, Science, and Related Agencies  
House Committee on Appropriations  
2372 Rayburn House Office Building  
Washington, D.C. 20515

The Honorable Derek Kilmer  
Ranking Member, Subcommittee on Commerce, Justice, Science, and Related Agencies  
House Committee on Appropriations  
1520 Longworth House Office Building  
Washington, D.C. 20515

**RE: Subcommittee on Commerce, Justice, Science, and Related Agencies Request for Written Testimony for the Record for FY 2017 Appropriations**

***Submitted By:***

**Gina G. Woodworth**  
**Senior Vice President, Public Policy & Government Affairs**  
**The Internet Association**

Dear Chairman Culberson, Ranking Member Kilmer, and Members of the Committee:

The Internet Association appreciates the opportunity to submit written testimony regarding Fiscal Year (FY) 2017 appropriations. We respectfully request that language accompanying the appropriations for the Criminal Division of the Department of Justice (DOJ) direct funds for the purpose of addressing the backlog and continued management of Mutual Legal Assistance Treaty (MLAT) requests.

The Internet Association is the unified voice of the Internet economy, representing the interests of leading Internet companies and their global community of users.<sup>1</sup> It is dedicated to advancing public policy solutions to strengthen and protect Internet freedom, foster innovation and economic growth, and empower users. Critical to our companies' ability to effectively assist law enforcement agencies around the world is the efficient processing of MLAT requests.

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<sup>1</sup> The Internet Association's members include Airbnb, Amazon, Coinbase, Dropbox, eBay, Etsy, Expedia, Facebook, FanDuel, Google, Groupon, Handy, Intuit, LinkedIn, Lyft, Monster Worldwide, Netflix, Pandora, PayPal, Practice Fusion, Rackspace, reddit, Salesforce.com, Snapchat, Spotify, SurveyMonkey, Ten-X, Turo, TripAdvisor, Twitter, Yahoo, Yelp, Uber, Zenefits, and Zynga.



## Internet Association

MLATs are agreements between countries that allow law enforcement officials or prosecutors to seek evidence related to a criminal investigation or prosecution from another country. The creation of MLATs predates modern technology, and the increasingly complex and global nature of data transfers on popular Internet platforms has led to increased requests from overseas for electronic data from U.S. companies. Many of the world's leading Internet companies have devoted significant resources to ensuring that they are able to work with our law enforcement agencies worldwide in effectively investigating criminal activity, but the MLAT backlog persists.

Under the current process, requests from partner nations are directed through multiple layers of bureaucracy, beginning with DOJ's Office of International Affairs, and submitted through the U.S. Attorneys and U.S. Courts, before U.S. companies holding the relevant data are asked to respond to the request. MLAT requests have grown by 85% since 2000,<sup>2</sup> which combined with a multistep process and few dedicated resources has led to a backlog of more than 5,000 MLAT requests and increased delays that can each take more than a year. Unfortunately, these significant delays have hindered our ability to quickly assist global law enforcement agencies in investigating criminal activity.<sup>3</sup>

Appropriations for FY 2016 included critical language in the report issued by this Committee to support progress in MLAT operations at DOJ:

*Within the funding provided the Committee supports use of funding in the Criminal Division to address the backlog in handling Mutual Legal Assistance Treaty (MLAT) requests, and to sustain positions added and case management improvements made in fiscal year 2016.*<sup>4</sup>

We commend the committee for including this language last year, and urge this Committee to direct funding for the Criminal Division's Office of International Affairs to the backlog and continued processing of MLAT requests through new technology, personnel, and training programs. Congressional efforts to manage the flow of MLAT requests in an increasing global digital environment, and your commitment to continuing these efforts through FY 2017 language will be crucial in our companies' ability to efficiently respond to MLAT requests.

While information regarding the use of appropriated FY 2016 funds by DOJ to carry out the MLAT related functions supported in last year's report is not yet available, Congress' continued efforts to improve DOJ's MLAT process by ensuring that funds are directed properly will provide needed attention to this issue within that Department - to centralize MLAT processing, implement new technology (via an external-facing .gov MLAT website and request form and internal processing

<sup>2</sup> Performance Budget: FY 2017 President's Budget: Department of Justice Criminal Division, p. 10 available at <https://www.justice.gov/jmd/file/820926/download>

<sup>3</sup> The White House noted in a recent review of U.S. intelligence matter in the digital age that MLAT requests are severely delayed, with many taking longer than 10 months to garner response. A lack of devoted DOJ financial resources has exacerbated the increased reliance on MLAT by partner nations. See "Liberty and Security in a Changing World: Report and Recommendations of the President's Review Group on Intelligence and Communications Technologies," The White House pp. 227-228 (Dec. 12, 2013) available at [https://www.whitehouse.gov/sites/default/files/docs/2013-12-12\\_rg\\_final\\_report.pdf](https://www.whitehouse.gov/sites/default/files/docs/2013-12-12_rg_final_report.pdf).

<sup>4</sup> Report of the Subcommittee on Commerce, Justice, Science, and Related Agencies on H.R. 2578, Report 114-130 (May 27, 2015) available at <https://www.congress.gov/114/crpt/hrpt130/CRPT-114hrpt130.pdf>.



## Internet Association

database), and increasing international outreach and training to law enforcement partners to ensure MLAT requests are consistent with U.S. legal standards.

We urge you to maintain language requiring the use of appropriated funds to ensure an effective MLAT process. Thank you for your attention to this issue.

Respectfully Submitted,

A handwritten signature in dark ink, appearing to read "Gina G. Woodworth". The signature is fluid and cursive, with the first name "Gina" and last name "Woodworth" being clearly distinguishable.

Gina G. Woodworth  
Senior Vice President, Public Policy & Government Affairs

CC: The Honorable Hal Rogers, Chairman, House Committee on Appropriations; The Honorable Nita Lowey, Ranking Member, House Committee on Appropriations

# Native American Rights Fund

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## TESTIMONY FOR THE RECORD ON THE FY 2017 BUDGET REQUEST FOR THE DEPARTMENT OF JUSTICE

**Submitted to the  
Subcommittee on Commerce, Justice, Science, and Related Agencies,  
House Committee on Appropriations**

**By the Native American Rights Fund  
March 21, 2016**

Summary of the Request: The Native American Rights Fund (NARF)<sup>1</sup> submits this written statement regarding the FY 2017 budget request for the Department of Justice (DOJ) for the record. We respectfully request this Subcommittee's consideration in the development of the FY 2017 Commerce, Justice, Science and Related Agencies appropriations bill of maintaining funding within the Department of Justice, Office of Justice Program, State and Local Law Enforcement Assistance account at a level similar to that provided in recent years of approximately \$2 million for the Tribal Civil and Criminal Legal Assistance, Training and Technical Assistance grant program within either "assistance to Indian tribes" or a tribal set-aside of a percentage of all Office of Justice Programs accounts, as the Administration has again proposed for FY 2017. We also request the inclusion of report language – as provided in recent years in the Committee's report accompanying the spending bill – that would direct that DOJ's allocation of FY 2017 funding for "assistance to Indian tribes" or under a tribal set aside of overall DOJ funding include mention of some funding for the provision of civil and criminal legal assistance to individual tribal citizens and to tribal judicial systems pursuant to the Indian Tribal Justice Technical and Legal Assistance Act (Public Law 106-559).

Background to the Request: In 2000, Congress enacted the Indian Tribal Justice Technical and Legal Assistance Act (Public Law 106-559). Sections 102 and 103 of that statute

<sup>1</sup> Founded in 1970, the Native American Rights Fund (NARF) is the oldest and largest non-profit law firm dedicated to asserting and defending the rights of Indian tribes, organizations and individuals nationwide. NARF's practice is concentrated in five key areas: the preservation of tribal existence; the protection of tribal natural resources; the promotion of Native American human rights; the accountability of governments to Native Americans; and the development of Indian law and educating the public about Indian rights, laws, and issues.

specifically authorized the Department of Justice, subject to available appropriations, to provide grants to “non-profit entities ... which provide legal assistance services for Indian tribes, members of Indian tribes, or tribal justice systems pursuant to Federal poverty guidelines” [emphasis added] for tribal civil and tribal criminal legal assistance, respectively. The Indian Tribal Justice Technical and Legal Assistance Act of 2000 was reauthorized as section 242 of the Tribal Law and Order Act (Public Law 111-211).

For the past six years, a consortium of 24 Indian Legal Services programs connected with the Legal Services Corporation (LSC) and operating in 23 states has been awarded funding under DOJ’s Tribal Civil and Criminal Legal Assistance, Training and Technical Assistance (TCCLA) grants program. In addition to individual representation, Indian Legal Services programs are currently assisting more than 160 tribal governments and/or tribal judicial systems.

Most recently, under the FY 2015 grant solicitation, the Bureau of Justice Assistance awarded the Indian Legal Services programs a total of \$1.2 million to provide civil and criminal legal assistance to thousands of Native American clients, including juveniles, who meet federal poverty guidelines. We are awaiting an announcement about whether some of the FY 2016 appropriation for “assistance to Indian tribes” will be allocated to the TCCLA program.

Since 1968, Indian Legal Services programs have been providing essential capacity-building services to many tribal courts across the country, and have provided representation of Indian individuals in those courts. In particular, Indian Legal Services programs have been assisting tribal governments and tribal citizens to implement and accomplish the significant victories that Indian Country achieved with the Tribal Law and Order Act of 2010 (TLOA) and the Violence Against Women Reauthorization Act of 2013 (VAWA).

With respect to the work of capacity-building services to tribal judicial systems, tribes have noted that the lack of attorneys practicing in tribal court is the single biggest barrier to exercising the authorities under the Tribal Law and Order Act and the Violence Against Women Reauthorization Act of 2013. A number of Indian Legal Services programs are currently providing capacity-building assistance to tribes, and that is laying the foundation toward their implementation of TLOA and VAWA. This work includes assisting tribes with revisions to their criminal codes for compliance with these statutes, as well as drafting and updating codes, policies and procedures; establishing or rehabilitating tribal courts; training judicial and law enforcement personnel; and negotiation or litigation to address jurisdictional issues with state court systems. The programs are engaged in TLOA or VAWA implementation assistance for 18 of the 160 tribes they serve, and provide the only public defender service available in at least 46 tribal courts.

In many instances, these Indian Legal Services programs have been “on the ground” in tribal communities for decades, an integral part of the legal structure of the reservation communities they serve. The attorneys are well-versed in the uniqueness and complexities of Indian law, and are specialized legal practitioners. The Indian Legal Services programs are assisting tribal governments and their justice systems in being grounded in solid codes and laws – which benefits not only members of the tribal community, but non-Indians who do business, attend school, collaborate with tribal enterprises and live in these tribal communities. This work

includes such assistance as tribal court development, restructuring and improvement; development of tribal dispute resolution, peacemaker/mediation systems and alternatives to incarceration; drafting of civil and criminal codes, including children's codes, and rules of procedure; and training of tribal court and justice systems personnel and tribal court lay advocates and guardians *ad litem*. Lay advocate and peacemaker trainings have been done with tribal colleges and university law schools.

In addition, legal representation of American Indian and Alaska Native youth and families is a central focus of many of the Indian Legal Services programs' individual representation cases. In affording access to justice for individuals, the programs' individual legal representation has expanded from traditional legal issues such as employment, disability benefits claims and housing issues to include domestic violence, *pro se* assistance, family member prisoner visitation, re-entry and expunctions for certain criminal charges, and child welfare, guardianship and adoption. This work also includes representation of families in Indian Child Welfare Act cases in state court; addressing the impact on individuals and families from substance abuse and correlated incidents of criminal activity by reforming tribal sentencing guidelines; representation in divorce, child custody, paternity, child support, guardianship (minor and adult), and children in need of care cases (juvenile dependency) and in will drafting cases; and providing civil legal and public defender services.

Here are several state-specific examples of Indian Legal Services program:

- **Alaska** Legal Services has continued working with a south-central Alaska tribe that is developing a groundbreaking joint state-tribal therapeutic drug court, providing legal advice to the Tribe as it develops ideas on how state and tribal judges can sit jointly on cases.
- Serving the citizens of and located on the Navajo Reservation in **Arizona, New Mexico** and Utah, one of DNA People's Legal attorneys has been working with Navajo Nation Prosecutors to start revising the Navajo Nation Criminal Code as it relates to the Sex Offender Registration and Notification Act.
- After meeting with the California law review commission, **California** Indian Legal Services staff has been developing a final draft of the model adult guardianship code to address how the tribes will fit in the State's adoption of the Uniform Adult Guardianship and Protective Procedures Act.
- Pine Tree Legal Assistance of **Maine** has been assisting the Passamaquoddy Restorative Justice Commission with proposed revisions to the Tribe's sentencing guidelines that would allow for the inclusion of both traditional conflict resolution practices and community-based healing and restoration processes.
- **Oklahoma** Indian Legal Services developed an expungement practice to clear criminal records of tribal members whose lives are adversely impacted by their criminal record.


- Northwest Justice Project in **Washington** provides free legal advice clinics for low-income tribal members on hard-to-reach Indian reservations in the State. The legal advice clinics discuss civil legal issues such as Family Law (custody, divorce and child support); Housing Law (evictions foreclosures, tenant and mobile home rights); Consumer Law (pay day loans, collections and repossessions); Education Law (suspensions, expulsions and special education rights); Employment Law (terminations); and Health and Welfare Benefits.
- **Wisconsin** Judicare has been participating with statewide efforts to improve Indian Child Welfare Act compliance over the past five years since the passage of the Wisconsin Indian Child Welfare Act.

The TCCLA grants that Indian Legal Services programs have been awarded are funded separately from DOJ's Consolidated Tribal Assistance Solicitation (CTAS) program. In fact, a number of the Indian Legal Services programs provide capacity-building assistance to very small tribes or consortia of small tribes which do not have the personnel or resources to submit applications for CTAS funding, and/or civil or criminal legal representation of their members.

In FY 2017, whether Congress provides funding to the DOJ in an overall sum for Indian Country law enforcement programs (such as the \$30 million appropriated in FY 2016 for "assistance for Indian tribes"), or as a tribal set-aside of a percentage of overall DOJ funding, we request that funding of approximately \$2 million be designated for the purpose of the provision of tribal civil and criminal legal assistance to individual tribal citizens and to tribal judicial systems pursuant to the Indian Tribal Justice Technical and Legal Assistance Act.

Thank you for your consideration of this request.

Sincerely,



Steven C. Moore  
Senior Staff Attorney

**Mr. Jason Patlis, President and CEO, National Marine Sanctuary Foundation  
Testimony Submitted to the House Appropriations  
Subcommittee on Commerce, Justice, Science and Related Agencies  
“FY2017 NOAA Office of National Marine Sanctuaries Appropriations”**

**March 25, 2016**

**FY17 Appropriations Request**

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The National Marine Sanctuary Foundation (NMSF) works with Congress and the National Oceanic and Atmospheric Administration (NOAA) to connect fellow citizens to the underwater places that define the American ocean – the National Marine Sanctuary System.

NMSF applauds the subcommittee’s continued support for America’s national marine sanctuaries. But, we remain concerned that NOAA’s Office of National Marine Sanctuaries (ONMS) has not received sufficient appropriations for several budget cycles. Recognizing the strong and growing public support within communities and the economic growth and job creation benefits provided by sanctuaries, NMSF respectfully requests the subcommittee remedy this situation by appropriating:

- ***\$55 million to Sanctuaries and Marine Protected Areas, within NOAA’s Operations, Research, and Facilities account; and***
- ***\$5.5 million to Marine Sanctuaries Construction, within NOAA’s Procurement, Acquisition, and Construction account.***

Joining NMSF in this request is a national network of community-based, non-profit organizations that support sites within the sanctuary system. On behalf of their members, the California Marine Sanctuary Foundation (CA), Cordell Marine Sanctuary Foundation (CA), Farallones Marine Sanctuary Association (CA), Friends of Thunder Bay National Marine Sanctuary (MI), Gray’s Reef National Marine Sanctuary Foundation (GA), Hawai’i National Marine Sanctuary Foundation (HI), and Sanctuary Friends Foundation of the Florida Keys (FL) support funding the National Marine Sanctuary System at these levels.

**A Growing Grassroots Movement: Strengthening The National Marine Sanctuary System**

The National Marine Sanctuary System consists of 14 sites encompassing over 170,000 square miles of marine and Great Lakes waters from Washington State to the Florida Keys, and from Lake Huron to American Samoa. Sanctuaries protect vibrant ocean ecosystems, conserve essential habitat for endangered and commercially important marine species, and safeguard historical and cultural resources.

The American people have seen the benefits that sanctuaries provide for local communities and our nation, and they are voicing their support. Communities are coming together to discuss how to protect our ocean, coasts and Great Lakes by strengthening existing sites and nominating and designating new sanctuaries for the first time in 15 years. The expansions of Thunder Bay, Greater Farallones, and Cordell Bank national marine sanctuaries were grounded and driven by broad-based, diverse community support and Congressional leadership. Likewise, recent nominations and designations for new sites are championed by local leaders bringing together their communities.



Just as the nation is on the verge of celebrating and conserving its maritime resources and heritage, ONMS should receive additional funding to be responsive to the growing grassroots movement for national marine sanctuaries in communities nationwide.

### **Sanctuaries are Highly-Participatory, Multi-Use, Balanced Ocean Conservation Tools**

Communities nationwide benefit from the highly participatory, multi-use, balanced approach offered by national marine sanctuaries. Generations of Americans have grown up, worked jobs, and supported their families on the waters of our national marine sanctuaries. Among all the statutes enacted by Congress to govern ocean resources, the National Marine Sanctuaries Act stands alone in terms of the comprehensiveness, transparency and balanced approach provided for all stakeholders.

An independent legal analysis concluded that “the National Marine Sanctuaries Act is the best existing mechanism available for preserving ocean ecosystems,” due to sanctuaries’ commitment to public participation, community engagement, and use of a place- and ecosystem- based approach.<sup>1</sup> Unlike other ocean resource laws, the National Marine Sanctuaries Act protects nationally significant places and their natural, historical, and cultural riches. Experience shows that this approach is vital to maintaining the healthy seascapes that underpin our productive economies, supporting thousands of businesses while maintaining public access for recreation, science, exploration, and education.

### **National Marine Sanctuaries are Economic Engines for Coastal Communities**

Sanctuaries foster economic growth, support jobs and businesses, generate billions of dollars in local revenue, preserve underwater and maritime treasures, and provide valuable public access for ocean recreation, research, exploration, and education. Because of strong ties to the local communities, businesses, and organizations, sanctuaries are able to heavily leverage private funds and contributions for taxpayer benefits, ensuring that the benefits of funding national marine sanctuaries far outweigh the federal outlays that support them.

**Last year, the 14 sites in the sanctuary system helped drive more than \$8 Billion annually to their communities.**<sup>2</sup> Additionally, sanctuaries afford their visitors many recreation opportunities, and the money these activities generate has a substantial economic impact on the surrounding local and regional communities:

- Miami-Dade and Broward County’s economies are dependent on the Florida Keys National Marine Sanctuary. Economic contributions of visitors to the sanctuary generated **\$1.897 billion in sales and \$2.62 billion in income for the residents.**<sup>3</sup>
- **Over \$126 million** in whale watching revenue and **600 jobs** at 31 businesses resulting from less than \$2 million invested in the Stellwagen Bank National Marine Sanctuary off of Massachusetts.<sup>4</sup>

<sup>1</sup> Perkins Coie LLP. (2013) “Area-Based Management of Marine Resources: A Comparative Analysis of the National Marine Sanctuaries Act and Other Federal and State Legal Authorities.” Available: <http://www.nmsfocean.org/files/ABMReport.pdf>

<sup>2</sup> National Marine Sanctuaries Socioeconomic Fact Sheet Available: <http://sanctuaries.noaa.gov/science/socioeconomic/pdfs/onms-socioeconomics-summary.pdf>

<sup>3</sup> Vernon Leeworthy and Rod Ehler (2010) Economic Contribution of Recreating Visitors to the Florida Keys/Key West 2007-2008 Available: <http://sanctuaries.noaa.gov/science/socioeconomic/floridakeys/pdfs/economic08.pdf>

<sup>4</sup> O’Connor, Simon et al (2009). Whale Watching Worldwide: tourism numbers, expenditures and expanding economic benefits, a special report from the International Fund for Animal Welfare. Prepared by Economists at Large. Available: [http://www.ifaw.org/Publications/Program\\_Publications/Whales/asset\\_upload\\_file841\\_55365.pdf](http://www.ifaw.org/Publications/Program_Publications/Whales/asset_upload_file841_55365.pdf).

- **2,100 jobs** and a **\$291 million** budget from marine science and education at the Monterey Bay National Marine Sanctuary, more than 100 times the \$3 million investment by taxpayers.<sup>5</sup>
- **Over half (58%) of visitors** to Alpena, Michigan came to visit Thunder Bay National Marine Sanctuary, which is the region's most popular attraction, boasting nearly **100,000 visitors** per year.<sup>6</sup>
- **\$11.8 million in new revenue and 334 new jobs** would be created by the proposed Central Coast National Marine Sanctuary with a projected 5% increase in tourism for San Luis Obispo County and a regional impact of \$18 Million and 547 new jobs.<sup>7</sup>
- **\$127 million is spent on non-consumptive recreation**, which accounts for 95% and 86.7% in the Northern portion of Monterey Bay and Greater Farallones National Marine Sanctuaries, respectively. This non-consumptive recreation industry supports 1,700 jobs.<sup>8</sup>
- **\$101.6 million was spent on recreation** in the Olympic Coast National Marine Sanctuary. This spending generated, with multiplier impacts, \$128.2 million in output, \$78 million in value-added (gross regional product), and \$46.1 million in income, which supported 1,192 jobs.<sup>9</sup>

### **National Marine Sanctuaries Start and Stay in Local Communities**

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Sanctuaries are created by and for the people. Public participation is a hallmark of the Office of National Marine Sanctuaries and underscores its dedication to civic engagement and leadership. From nomination to designation and day-to-day management decisions, sanctuaries start and stay in local communities. Because of this model, citizens and communities nationwide are expressing a growth of enthusiasm for national marine sanctuaries.

Communities have a controlling influence on sanctuary priorities to ensure unique, local circumstances are addressed. Sanctuary rules and regulations are developed on a site-by-site basis, and, from the outset, sanctuaries are designed to accommodate multiple uses of the ocean.

- **Over 440 community representatives** serve on Sanctuary Advisory Councils with members from the fishing, tourism, and maritime commerce industries; tribes, state and local government; and scientists, educators, and conservationists to provide advice to sanctuary superintendents on sanctuary operations.
- **Over 149,000 hours—equivalent to 74 Full Time Federal Employees and valued at \$3.46 million**—are contributed by local sanctuary volunteers each year in areas of research, monitoring, enforcement, education and outreach, and management advisory.

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<sup>5</sup> Monterey Bay Crescent Ocean Research Consortium. (2012) "Major Marine Sciences Facilities in the Monterey Bay Crescent- 2012." Available: [http://web.me.com/paduan/mboarc/Membership\\_Info\\_files/MontereyBayLabs2012-2.pdf](http://web.me.com/paduan/mboarc/Membership_Info_files/MontereyBayLabs2012-2.pdf).

<sup>6</sup> Source: Molnar, Lawrence. 2013. "Economic Impact Analysis for The National Oceanic and Atmospheric Administration, Thunder Bay National Marine Sanctuary, Final Report." Ann Arbor, MI: Institute for Research on Labor, Employment, and the Economy, University of Michigan (July). Available: [http://idee.umich.edu/Publications/Docs/ThunderBayNMS\\_FinalReport.pdf](http://idee.umich.edu/Publications/Docs/ThunderBayNMS_FinalReport.pdf).

<sup>7</sup> Jason Score and Judith Kildow (2014) The Potential Economic Impacts of the Proposed Central Coast National Marine Sanctuary Available: <https://chrms.files.wordpress.com/2014/10/chumash-sanctuary-economic-report-100814.pdf>

<sup>8</sup> US Department of Commerce, NOAA, NOS, ONMS (2015) Economic Impact of Recreational Fisheries on Local County Economies in California's National Marine Sanctuaries 2010, 2011 and 2012 Available: [http://sanctuaries.noaa.gov/science/socioeconomic/pdfs/california\\_rec\\_sanctuaries.pdf](http://sanctuaries.noaa.gov/science/socioeconomic/pdfs/california_rec_sanctuaries.pdf)

<sup>9</sup> Personal Communication

### **National Marine Sanctuaries' Programmatic Outlook under Reduced FY17 Funding Levels**

Funding decreases have resulted in layoffs and cutbacks to mission critical sanctuary programs. A lack of funds may result in cuts to public access and recreation opportunities, reduced operations at visitor centers, cancellation of partnerships, a lack of contingency funding needed in case of emergencies like oil spills, and additional inoperable vessels. Of particular concern are proposals to reduce funding for necessary and ongoing renovation and construction projects.

The potential impact of reducing sanctuary appropriations goes far beyond the individual sanctuaries themselves: limiting visitor center hours, eliminating research programs, and diminishing enforcement capacities prevents ONMS from fulfilling its statutory mandates, while also reducing the economic activity and job creation from which healthy communities benefit. Funding sanctuaries below NMSF's recommended levels could force the program to:

- **Reduce public access and recreation opportunities for all Americans:** Funding cuts risk the Florida Keys National Marine Sanctuary's 767 mooring buoys, which provide public access and recreational opportunities within the sanctuary while protecting coral reefs and shipwrecks from anchor damage.
- **Cut visitor center hours:** Sanctuary visitor centers act as a public face of NOAA to over 350,000 visitors per year, including Monterey Bay National Marine Sanctuary Exploration Center (CA), Mokupāpapa Discovery Center (HI), Great Lakes Maritime Heritage Center (MI), and Florida Keys EcoDiscovery Center (FL).
- **Cancel education and outreach programs that leverage private funds:** Reduced funding jeopardizes education and outreach activities on the water, at sanctuaries and visitor centers, and in classrooms.
- **Vessels Stuck at the Docks and Facing Safety Concerns:** Continued under-investment in the sanctuary fleet maintenance and procurement of new vessels to replace an aging fleet has left a backlog of repairs and needs that could eventually result in the need to leave sanctuary vessels tied up at the docks or could pose a safety concern for sanctuary staff and partners alike.

**Testimony of  
Monica G. Turner, President of the Ecological Society of America**

**Regarding the National Science Foundation FY 2017 Budget**

**To the  
House Committee on Appropriations**

**Subcommittee on Commerce, Justice, Science and Related Agencies**

**March 18, 2016**

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The Ecological Society of America appreciates the opportunity to provide testimony about the fiscal year (FY) 2017 budget for the National Science Foundation. **On behalf of the world's largest society of professional ecologists, I write to request that you support \$8 billion for the National Science Foundation in Fiscal Year 2017.**

The 2016 National Science Board Science and Engineering Indicators report found that China, South Korea and India are rapidly increasing their investment in scientific research and development. China now leads the United States as the world's number one producer of undergraduates with degrees in science. China graduates 49 percent of science bachelor's degrees among degrees in its country, compared to 33 percent of bachelor's science degrees given in the United States. The \$8 billion for NSF funding is necessary for NSF to keep pace with inflation and allow our nation to maintain its place as a global leader in innovation and discovery.

NSF provides critical funding for Science, Technology, Mathematics and Engineering (STEM) research and education programs that are vital to fostering and sustaining American jobs in scientific fields. In a given year, NSF awards reach nearly 1,900 colleges, universities, and other public and private institutions in all 50 states, the District of Columbia, and five territories. These awards fund early career scientists and enable undergraduate and graduate students to conduct research with leading scientists, thus ensuring future generations obtain the skillset to pursue careers in science that are vital for creating jobs and maintaining our nation's global competitiveness.

This funding will also sustain NSF's Biological Sciences Directorate (BIO), which is the primary federal funding source for basic biological research at US colleges and universities. Sixty-eight percent of academic basic research in non-medical biology is supported by BIO. Its research disciplines include botany, zoology, microbiology, ecology, basic molecular and cellular biology and other fields that help foster new scientific discoveries in the realms of food, fiber, fuel, pharmaceuticals, and bio-inspired innovation. This research contributes to the development of sustainable solutions to environmental challenges posed by natural resource scarcity, wildland fires, droughts, flooding, and emerging threats from invasive species and zoonotic diseases.

ESA recognizes the critical role that all of NSF's directorates play in furthering research innovation and discovery. As the sole agency funding all fields of science, we are grateful that House and Senate appropriators continue to grant NSF the discretion to determine funding for its individual directorates. This allows the agency the flexibility to adapt to unanticipated discoveries and meet future challenges. NSF's research agenda is informed by a rigorous non-partisan process, which includes decadal reports, convening expert workshops, and input from the scientific community. It is important that NSF continues to carry out its mission untainted by partisan or ideological motivations.

The Society is appreciative of the strong bipartisan, bicameral support NSF has received from Congress over many years. We hope you will continue to grant the agency the resources it needs to advance scientific careers and ensure that our nation retains its competitive edge in scientific discovery and innovation.

Prepared on behalf of American Chemical Society by:

1 of 2

Katelynn Eckert  
Advocacy Manager  
Office of Public Affairs  
American Chemical Society  
Washington DC 20036

## **House Appropriations Subcommittee on Commerce, Justice, and Science**

### **Testimony on the National Science Foundation's Fiscal Year 2017 Appropriations**

**March 29, 2016**

**Submitted by  
The American Chemical Society**

The American Chemical Society (ACS) urges Congress to provide, at a minimum, \$8 billion for the National Science Foundation (NSF) for FY17, a 7.2 percent increase over the FY 16.

NSF investments in research and education have returned exceptional dividends to the American people as globalization has amplified the worldwide competition for ideas, science and engineering talent, and leadership in turning new technologies into real world applications. The United States has held a commanding position in all three areas. Now, other nations are implementing new policies and stepping up investments in research and training new talent. These global initiatives pose new challenges for America's innovation enterprise.

Sequestration and inflation have eroded NSF's ability to innovate. Increased investment will allow for the development of new technologies, stronger national security, energy self-sufficiency, and improvements in our nation's health.

#### **Research**

Increases in the NSF research budget should primarily support a greater number of highly rated core research proposals. Supporting the best ideas and exploring new frontiers across research disciplines have been the hallmark of NSF and the backbone of the American research system. A commitment to core basic research is essential to meet the enormous promise of scientific innovation; to better train future scientists, engineers, and technicians; and to promote the success of multidisciplinary initiatives, including biotechnology and nanotechnology. ACS also notes that NSF plays a central role in supporting chemistry, physics, mathematics, and other key research areas at colleges and universities

**Green Chemistry**

ACS recognizes the Sustainable Chemistry Program (SusChEM) is slated to transition as the Science, Engineering, and Education for Sustainability [SEES] program is scheduled to sunset in fiscal year 2017, but encourages NSF to robustly fund and maintain SusChEM. ACS believes sustainable and green chemistry will only become widespread practice throughout industry and academia through strong support by federal agencies. Furthermore, ACS supports including sustainability as a basic aspect of grant application. ACS supports NSF developing a long term vision for sustainable and green chemistry as establish in provisions in the 2010 America COMPETES reauthorization (Pub. L. 111-358).

**Written Testimony**  
**Felice J. Levine, PhD, Executive Director**  
**American Educational Research Association**  
**U.S. House of Representatives, Committee on Appropriations**  
**Subcommittee on Commerce, Justice, Science and Related Agencies**  
**Fiscal Year 2017 Appropriations for the National Science Foundation**  
**Directorate for Education and Human Resource Directorate and**  
**Directorate for Social, Behavioral and Economic Sciences**  
**March 31, 2016**

Chairman Culberson, Ranking Member Honda, and Members of the Subcommittee, thank you for the opportunity to submit written testimony on behalf of the American Educational Research Association. Appreciative of the continuing stringent times, I recommend that the National Science Foundation receive \$8 billion in fiscal year 2017. This recommendation is consistent with that of the Coalition for National Science Funding, in which we are an active member. In addition, I would like to state our support for the \$953 million requested for the Education and Human Resources (EHR) Directorate and \$289 million requested for the Directorate for Social, Behavioral and Economic (SBE) Sciences in fiscal year 2017. Furthermore, I will comment on the language to limit funding for the SBE Directorate that appeared in the report that accompanied the House Commerce, Justice Science FY 2016 appropriations bill.

AERA is the major national scientific association of 25,000 faculty, researchers, graduate students, and other distinguished professionals dedicated to advancing knowledge about education, encouraging scholarly inquiry related to education, and promoting the use of research to serve public good. Many of our members are engaged in science, technology, engineering, and mathematics (STEM) education research. Our members work in a range of settings from universities and other academic institutions to research institutes, federal and state agencies, school systems, testing companies, and nonprofit organizations, engaged in conducting research in all areas of education and learning.

AERA values the leadership role of the National Science Foundation (NSF) in advancing scientific breakthroughs and fundamental knowledge. This testimony focuses specifically on the two directorates that primarily support education research at NSF. We are particularly enthusiastic about how the Education and Human Resources Directorate (EHR) plans to use these resources to advance sustained and significant STEM research. In addition to the significant investments in education sciences provided by EHR, AERA values the important role the Social, Behavioral and Economic Sciences Directorate (SBE) in funding important education research, including the essential statistical information provided by the National Center for Science and Engineering Statistics.



On behalf of AERA, I wish to highlight significant activities within the EHR Directorate and to offer our whole hearted support for the continued emphasis on core STEM education research to better engage, sustain, and retain STEM learners, leading to an inclusive and competitive STEM workforce.

The EHR Directorate at NSF is responsible for providing the research foundation necessary to achieve excellence in U.S. STEM education. EHR sets out to accomplish this goal by supporting the development of a scientifically-literate citizenry as well as a STEM-skilled workforce. This responsibility requires coordination and collaboration across all NSF directorates and with other federal agencies.

AERA supports the three core research areas: Broadening participation and institutional capacity; learning and learning environments; and STEM professional workforce development. Furthermore, we are pleased to see that the EHR Core Research (ECR) program continues to be a top priority in FY 2017 with increased funding in every division. Investments like ECR have successfully increased the percentage of funding allocated to research and development within the EHR Directorate.

EHR bolsters federal investments in STEM education by funding the research and development that informs strategic education investments across NSF and other agencies. We urge the Committee to look favorably on this request as an opportunity to support a well-developed and compelling plan.

AERA's interest in the Social, Behavioral and Economic Sciences (SBE) Directorate relates primarily to the directorate's support of research that promotes the understanding of people and reveals basic aspects of human behavior in the context of education and learning. The budget plan for SBE in FY 2017 reflects priorities for advancing fundamental knowledge in the social, behavioral, and economic sciences that provides critical research to promote the Nation's economy, security, and global leadership. The budget for SBE is not even 4 percent of the NSF budget, yet it provides approximately 66 percent of the federal funding for basic research in social, behavioral, and economic sciences at academic institutions. In addition, AERA has a strong interest in the National Center for Science and Engineering Statistics (NCSES) within SBE. NCSES provides invaluable statistical information about science and engineering in the U.S. and around the world.

NCSES collects and analyzes data on the progress of STEM education and the research and development. This information also provides valuable information on the trajectories of STEM graduates both in STEM and non-STEM careers. The FY 2017 budget request for NCSES will support critical activities to improve surveys and redesign questionnaires to enhance data on

measures of educational pathways for scientists; develop new data techniques building on administrative data; and enhance data tools, techniques, and visualizations to facilitate access to statistical resources.

On behalf of AERA, I want to thank both the Chairman and the Ranking Member for their recent comments in regards to the importance of providing NSF with the flexibility to determine directorate funding levels within the Research and Related Activities Account. AERA shares the opinion of Director Cordova, that this flexibility enables NSF to best 'build a portfolio of the most exciting research across all fields.' My hope is that the scientific community can trust these conversations as assurance that the committee will not introduce report language limiting funding for the SBE or any other Directorate within the Research and Related Activities Account.

Thank you for the opportunity to submit written testimony in support of \$8 billion for the National Science Foundation reflecting \$953 million for the Education and Human Resources Directorate and \$289 million requested for the Directorate for Social, Behavioral and Economic Sciences in fiscal year 2017. AERA would welcome any opportunity to work with you and your subcommittee to best further the crucial advances of the National Science Foundation. Please call on us if we can provide additional information regarding this budget proposal.



## Written Testimony American Geosciences Institute

### Testimony Submitted by American Geosciences Institute

P. Patrick Leahy  
Executive Director

### To the United States House of Representatives Committee on Appropriations Subcommittee on Commerce, Justice, Science, and Related Agencies Regarding the National Science Foundation, National Oceanic and Atmospheric Administration, National Institute of Standards and Technology, and National Aeronautics and Space Administration

March 25, 2016

Thank you for this opportunity to provide the American Geosciences Institute's perspective on fiscal year (FY) 2017 appropriations for geoscience programs within the Subcommittee's jurisdiction.

The American Geosciences Institute (AGI) supports critical earth science research conducted by the National Science Foundation (NSF), the National Oceanic and Atmospheric Administration (NOAA), the National Institute of Standards and Technology (NIST), and the National Aeronautics and Space Administration (NASA). Cutting-edge research on the Earth, energy, and the environment has fueled economic growth, mitigated losses, and improved our quality of life. All of these agencies carry out vital mission-focused geoscience research and participate in a range of interagency collaborations with the U.S. Geological Survey, the Department of Energy, other federal agencies, and state, tribal, and local agencies on topics ranging from emergency planning and response to anticipating water availability. The Earth system is highly complex and interconnected, geoscience information from all these agencies is vital for decision making at all levels of government.

**AGI respectfully requests at least \$8 billion funding for NSF, including \$1.4 billion for the Geoscience Directorate. AGI supports the President's request for \$5.85 billion for NOAA, \$1 billion for NIST, and \$2.03 billion for NASA Earth Science programs.**

AGI is a nonprofit federation of 51 geoscientific and professional societies that represent more than 250,000 geologists, geophysicists, and other Earth scientists. Founded in 1948, AGI provides information services to geoscientists, serves as a voice for shared interests in our profession, plays a major role in strengthening geoscience education, and strives to increase public awareness of the vital role the geosciences play in society's use of resources, resilience to hazards, and the health of the environment.

## National Science Foundation

Research across all areas of science and engineering contributes knowledge and understanding about many societal issues ranging from homeland security to cyberinfrastructure, and it produces revolutionary and often unforeseen breakthroughs. Basic research provides information that is used to improve people's quality of life, it is the foundation for a dynamic and innovative economy, and it strengthens the security of the nation.

NSF not only provides core funding and essential infrastructure for basic research, it also supports the education and training of the next generation of the workforce. AGI believes that investment in NSF programs, where funding is allocated based on competitive, scientific merit and peer review, will pay important dividends in maintaining U.S. dominance in science and technology far into the future. **AGI supports the President's request for \$8 billion for NSF.**

***NSF Geosciences Directorate:*** The Geosciences Directorate (GEO) is the principal source of federal support for academic earth scientists and their students who seek to understand the Earth and the processes that sustain and transform life on this planet. The Geosciences Directorate provides about 64 percent of federal funding for basic geoscience research at academic institutions. The Directorate expects to distribute about 1,400 research grants and 1,600 competitive awards in FY 2017 while also supporting indispensable research infrastructure and instrumentation. **AGI respectfully asks the Subcommittee to provide the Geosciences Directorate with at least \$1.4 billion for FY 2017.**

The GEO Directorate plays a significant role in NSF's cross-foundational initiatives, particularly the Innovations at the Nexus of Food, Energy, and Water Systems (INFEWS) and Prediction of and Resilience against Extreme Events (PREEVENTS) activities. Geoscience research is fundamental to all elements of INFEWS, contributing information on fossil, nuclear, and renewable energies; the quantity, quality, and distribution of water supplies; the characteristics, health, and stability of soils; and on the critical zone where earth, biological, and human systems intersect. The PREEVENTS initiative will strengthen the nation's resilience to natural disasters such as hurricanes, droughts, and earthquakes, which are all linked to the Earth system. These investments in pre-disaster research and mitigation will provide an excellent return on investment, both in monetary and social terms. **AGI supports \$62 million for INFEWS and \$43 million for PREEVENTS, including \$14.78 million for INFEWS and \$23.50 million for PREEVENTS in the Geoscience Directorate, and particularly stresses the importance of the Earth Science Division's contribution to this work.**

NSF's Division of Polar Programs (PLR) funds basic research in the Arctic and Antarctic and manages all U.S. activities in Antarctica as a single, integrated program. As the U.S. enters its second year chairing the international Arctic Council, it is especially important to enhance polar research initiatives. The polar regions are the focus of intense scientific and political interest as the new navigation routes are opening access to resources and presenting security challenges. NSF-funded research and infrastructure are helping the United States understand environmental conditions in extreme environments, develop polar technology, and construct

data-driven strategic and security policies. **AGI suggests a minimum of \$465 million for the Division of Polar Programs.**

NSF funds facilities that enable researchers to access locations, data, and technologies that serve the overall research community. AGI strongly supports robust and steady funding for infrastructure and the operation and maintenance of major facilities, including the Academic Research Fleet, Geodetic and Seismological Facilities for the Advancement of Geosciences and EarthScope (GAGE and SAGE), Ocean Drilling Activities, the Ocean Observatories Initiative, and the National Center for Atmospheric Research (NCAR). A centralized pool of national geoscience infrastructure is an efficient way to achieve the maximum return on investment and to ensure that the nation has the equipment and expertise needed to respond rapidly to opportunities and emergencies. **AGI supports both the discretionary and mandatory funding requested by the President for these essential facilities within the Geosciences Directorate.**

***Directorate for Education and Human Resources:*** AGI's *Status of the Geoscience Workforce Report 2014* predicts a shortfall of approximately 135,000 geoscientists by 2022. NSF funding for geoscience education is essential to develop the competitive, skilled workforce that can fill this predicted gap in areas of vital national interest including energy and the environment. Geoscience education also creates an informed citizenry prepared to make well-founded decisions about the management of our planet and its resources. Outreach and education are important at all levels from K-12 through graduate-level education and should include formal and informal outlets to facilitate lifelong learning. **AGI strongly supports funding for geoscience education at all levels and particularly supports programs to diversify the geoscience student population and workforce such as the INCLUDES (Inclusion across the Nation of Communities of Learners that have been Underrepresented for Diversity in Engineering and Science) initiative.** AGI urges Congress to provide funding for the President's total request of \$242 million for NSF's Directorate for Education and Human Resources.

## **National Oceanic and Atmospheric Administration**

Geoscientists rely on NOAA for much of the data and long-term monitoring that enable research and rapid response for events such as hurricanes, drought, marine oil spills, and a range of coastal phenomena. The National Weather Service (NWS), Oceanic and Atmospheric Research (OAS), National Ocean Service (NOS), and the National Environment Satellite, Data and Information Service (NESDIS) programs provide the data necessary for understanding and mitigating these events, as well as sustaining our natural resources. **AGI supports the President's request for \$5.85 billion for NOAA and hopes that the subcommittee will continue to support these crucial initiatives.**

In addition, AGI supports increased funding for NWS to support landslide hazard assessments and to reduce losses from landslides and other ground failures.

## National Institute of Standards and Technology

Earth scientists and geotechnical engineers versed in the geosciences conduct basic research at NIST that is used by the public and private sectors to build resilient communities and stimulate economic growth. The research conducted and the information gained is essential for understanding natural hazards, identifying the infrastructure needed to build strong communities, and stimulating economic growth.

NIST is the lead agency for the National Earthquake Hazard Reduction Program (NEHRP), an interagency program responsible for the efficient coordination of research and resources to understand and mitigate earthquakes, but has received only a small portion of authorized funding in the past. **AGI strongly supports the President's request for \$1 billion for NIST and urges Congress to reauthorize and fund the National Earthquake Hazards Reduction Program (NEHRP).**

## National Aeronautics and Space Administration

NASA's current fleet of Earth-observing satellites provides the data necessary to understand our dynamic planet. Scientists rely heavily on data gathered from space to support weather and climate predictions and to understand the links between oceans, atmosphere, land, and biological systems. Government agencies and the private sector use NASA information intensively for decision making and in business.

Continuous, consistent, reliable data is the foundation for accurate assessments and forecasting of Earth's interconnected systems. Landsat satellites have been observing Earth's land surfaces continuously since 1972; geoscientists use Landsat data to monitor, predict, and react to drought, wildfires, changes in vegetation, and other changes to the Earth's surface. Data from the GRACE mission allow scientists to calculate groundwater and soil moisture levels, providing vital information for farmers and water managers. The GRACE-FO (Follow-On) mission will extend this essential dataset. **AGI strongly supports the continuation of the Landsat program and applauds the commitment to launch Landsat 9 as early as 2021 and Landsat 10 in or close to 2029. We support the President's request for \$2.03 billion for NASA Earth Science, including \$131 million for Landsat 9 and \$34 for the GRACE-FO mission.**

Thank you for the opportunity to present this testimony to the Subcommittee. If you would like any additional information for the record, please contact Maeve Boland at 703-379-2480, ext. 228 voice, 703-379-7563 fax, [mboland@agiweb.org](mailto:mboland@agiweb.org), or 4220 King Street, Alexandria VA 22302-1502.



Testimony of the **American Geophysical Union**  
 Written by Brittany Webster, Public Affairs Specialist,  
 Carissa Bunge, Public Affairs Specialist, &  
 Alexandra Shultz, Public Affairs Director

Prepared on 23 March 2016 for the  
**U.S. House Committee on Appropriations**  
**Subcommittee on Commerce, Justice, Science, and Related Agencies**

Regarding the  
**National Aeronautics and Space Administration**  
**National Oceanic and Atmospheric Administration**  
**National Science Foundation**

#### **Fiscal Year 2017 Budget Request**

The American Geophysical Union (AGU), a non-profit, non-partisan scientific society, appreciates the opportunity to submit testimony regarding the Fiscal Year (FY) 2017 budget request for the National Aeronautics and Space Administration (NASA), the National Oceanic and Atmospheric Administration (NOAA), and the National Science Foundation (NSF). **The AGU, on behalf of its more than 60,000 Earth and space scientist members, respectfully requests that the 114<sup>th</sup> Congress appropriate:**

- **\$20.3 billion overall for NASA,**
  - **\$2 billion for the Earth Science Mission Division,**
  - **\$1.71 billion for the Planetary Science Mission Division,**
  - **\$740 million for the Heliophysics Mission Division;**
- **\$6.05 billion overall for NOAA;**
- **\$8 billion overall for NSF.**

#### **National Aeronautics & Space Administration**

AGU requests that Congress appropriate \$20.3 billion for NASA in FY17. Additionally, AGU requests that Congress appropriate \$2 billion for NASA's Earth Science Mission and \$1.71 billion for NASA's Planetary Science Mission. These increases represent a 5 percent increase over the FY16 appropriated levels and ensure that NASA is able to continue its work and preserve U.S. leadership in Earth and space science and exploration. Of note is that a request of 5 percent allows NASA to grow above the rate of inflation and make critical progress towards achieving the scientific goals outlined in the Decadal studies produced by the National Research Council.

AGU also requests that Congress appropriate \$740 million for NASA's Heliophysics Science Mission. Unlike NASA's other Science Missions, Heliophysics received a cut in FY16 and has seen



only nominal increases in earlier years. This request is a 5.7 percent increase year-over-year from FY15 to FY17 and will ensure that NASA's Heliophysics Division is able to fulfill the intention of the *National Space Weather Strategy* and restore real dollar investments in heliophysics missions.

Within NASA's Science Mission Directorate, AGU requests that Congress set equitable appropriation levels for the Earth, Planetary, and Heliophysics Divisions to ensure they are in harmony with their respective Decadal studies produced by the National Research Council.

#### *Earth Science and Planetary Science Divisions*

Missions within NASA's Earth Science Division aid in flood and drought prediction, earthquake response, and optimizing military and commercial marine operations. Greater knowledge and forecasting skills are urgent when we consider the effort, time, and costs of protecting coastal infrastructure, human and animal health threatened by toxic algal blooms, developing new water resources for manufacturing and agriculture, and restoring communities in the wake of hazards. These observations, and many others like them, are integral and require the vantage point of outer space.

NASA's Planetary Science Division advances our understanding of the solar system and inspires future generations of scientists. NASA is on schedule to launch the next Mars rover in 2020 and plans to launch a Europa mission in the same decade, furthering our understanding of the conditions needed to sustain life.

Both areas of science, Earth and planetary, are complementary. The study of the Earth system – Earth's interacting physical, chemical, and biological processes – informs our understanding of other worlds in the solar system, and our exploration of these bodies advance our knowledge of Earth's evolution.

#### *Heliophysics Science Division*

Studying the sun and its interactions with Earth is crucial to increasing our knowledge of the dynamic solar processes that impact all life on our planet. This includes advance detection and warning of space weather events, such as solar storms, that have the potential to cause serious damage to our satellites, energy grid infrastructure, and the electronics we depend on everyday. The request would ensure that NASA's Heliophysics Division continues to advance our understanding of the threat of space weather, as directed by last year's *National Space Weather Plan*, and other interactions between the sun and the Earth.

#### **National Oceanic & Atmospheric Administration**

AGU requests that Congress appropriate \$6.05 billion for NOAA in FY17. This would be a 5 percent increase over the FY16 appropriated level for NOAA. Investing in NOAA not only keeps our country resilient in the face of environmental and public health hazards, but also strengthens our nation's capacity for science-based innovation and provides superior economic





value by enabling businesses and government to better manage risk.

In the face of natural hazards and environmental emergencies, NOAA serves as an essential foundation of community resiliency and public health. Weather, water, and climate events cause an average of approximately 650 deaths and \$15 billion in damage per year. NOAA is also responsible for around 90% of all presidentially-declared disasters. Strong support for NOAA will allow the agency to create detailed flooding forecasts for the 100 million Americans who do not currently have them; maintain the NEXRAD radar system used for 85% of all tornado and severe storm warnings; and continue adding to the 39,000 lives saved by NOAA's satellite rescue program. The services provided by NOAA are irreplaceable in emergency situations where time is a matter of life and death.

NOAA also plays a critical role in ensuring our economic stability. One third of U.S. GDP is affected by weather and the environment; 2015 saw 10 weather and climate disaster events resulting in losses exceeding \$1 billion. From large corporations to small businesses, the decision-based forecasting provided by NOAA allows American enterprises to make informed choices that save vital time, money, and resources. The high quality, uninterrupted data provided by NOAA and interpreted by NOAA scientists is a fundamental tool that millions of Americans rely on every day.

NOAA is constantly improving its ability to prepare for, respond to, and recover from major disasters and national security emergencies. NOAA's Space Weather Prediction Center forecasts geomagnetic storms from the sun, and can provide a 15- to 60- minute warning time before the surge of charged particles reaches Earth. These storms can disable power grids, shut down telecommunications, and disrupt commercial and military global positioning systems (GPS). Experts estimate the next large storm has the potential to cost our economy \$1-2 trillion. Without NOAA's advanced warnings, our national security and economy are left in a dangerously vulnerable position.

#### **National Science Foundation**

AGU requests that Congress appropriate \$8 billion for NSF in FY17. This would be a 7.2 percent increase over the FY16 appropriated level for NSF.

The Foundation is critical to America's ability to compete globally in technological and scientific innovation. Faced with ever-increasing international competition, maintaining U.S. scientific leadership requires continued robust investments in basic research and STEM education. NSF's annual budget provides about a quarter of the total federal budget for basic research conducted at U.S. colleges and universities. NSF is the only federal agency that supports research and education across all STEM fields at all educational levels. Over 90% of NSF's projects are funded using grants or cooperative agreements, of which three-fourths go to academic institutions. Research and education programs supported by NSF help increase and develop the knowledge base needed to push the frontiers of science, mathematics, and engineering disciplines, contribute to the development of the future science and technology



workforce, underpin new fields of inquiry, and promote interdisciplinary research and education. All of these undertakings facilitate technological innovation.

Even under tight budget constraints, it is vital for NSF to have steady budget levels that demonstrate real growth. Under constant 2014 dollars, NSF lost 5.8 percent of its budget from FY10 to FY14. This stagnant pace of funding is creating an innovation deficit in the U.S. – a widening gap between the actual level of federal government funding for research and higher education and what the investment must be for the U.S. to remain the world's innovation leader.

#### *Geosciences Directorate*

The Geoscience Directorate (GEO) awards research grants in the Earth, atmospheric, ocean, and polar sciences. Much of the geoscience research budget leads to a better understanding of critical national needs, such as water and mineral resources, energy resources, environmental issues, climate change, and mitigation of natural hazards. AGU asks the Subcommittee to strongly support these programs.

GEO supports infrastructure, operation, and maintenance costs for cutting edge facilities that are essential for fundamental and applied research. Geoscience-based research tools and academic expertise helped to track and contain the BP Deepwater Horizon oil spill, saving billions of dollars for Gulf industries and untold costs to the environment. Among the major infrastructure that NSF supports are the U.S. Arctic and Antarctic Facilities and Logistics, Academic Research Fleet, EarthScope Operations, Incorporated Research Institutions for Seismology (IRIS), the Ocean Drilling Program, the Ocean Observatories Initiative, and the National Center for Atmospheric Research. All of these programs are essential to our nation's innovation and economic well-being. AGU strongly supports robust and steady funding for the operation and maintenance of these major facilities.

#### *Earth Science Education*

The geoscience workforce is aging and retiring at a fast rate. Congress can grow this workforce, stimulate economic growth in the energy, natural resources, and environmental sectors, and improve natural resource literacy by supporting the full integration of Earth science information into mainstream science education at the K-12 and higher education levels. AGU strongly supports the new NSF INCLUDES program (Inclusion Across the Nation of Communities of Learners that have been Underrepresented for Diversity in Engineering and Science), the Integrated NSF Support Promoting Interdisciplinary Research and Education program (INSPIRE), the Graduate Research Fellowships (GRF), the Research Experiences for Undergraduates (REU), and the Faculty Early Career Development Program (CAREER). These programs are effective in building a science and engineering workforce for the twenty-first century that supports academia, industry, national defense, and federal and local governments.

**STATEMENT OF THE AMERICAN INDIAN HIGHER EDUCATION CONSORTIUM  
TO THE U.S. HOUSE OF REPRESENTATIVES - COMMITTEE ON APPROPRIATIONS  
SUBCOMMITTEE ON COMMERCE, JUSTICE, SCIENCE, AND RELATED AGENCIES**

**MARCH 31, 2016**

**This statement focuses on the National Science Foundation (NSF) and National Aeronautics and Space Administration (NASA).**

On behalf of this nation's 37 Tribal Colleges and Universities (TCUs), which compose the American Indian Higher Education Consortium (AIHEC), thank you for the opportunity to express our views and recommendations regarding the National Science Foundation's TCU Program (NSF-TCUP) and the National Aeronautics and Space Administration's Minority University Research and Education Project (NASA-MUREP) for American Indian and Alaska Native STEM Engagement Program (MAIANSE) for Fiscal Year 2017 (FY 2017).

**SUMMARY OF REQUESTS**

**National Science Foundation (NSF) - Education and Human Resources Directorate (EHR):** Since Fiscal Year 2001, a TCU initiative has been funded and administered under the NSF-EHR. This competitive grants program enables TCUs to enhance the quality of their STEM instructional, research, and outreach programs. TCUs that have been awarded an NSF-TCUP grant are expected to complete a comprehensive program needs analysis and to develop a plan for addressing both their institutional and NSF goals, with a primary goal being significant and sustainable expansion and improvements to STEM programs. Through NSF-TCUP, tribal colleges have been able to establish and maintain programs that represent a key component of the career pipeline for the American Indian STEM workforce. ***We urge the Subcommittee to fund competitively awarded NSF-TCUP grants at a minimum of \$14,000,000.***

**National Aeronautics and Space Administration (NASA) – NASA Headquarters, Office of Education - Minority University Research and Education Programs (MUREP):** In 2014, the NASA-MUREP program initiated two competitive grant programs to enhance the range of STEM education and research opportunities open to 34 eligible TCUs: (1) Earth Systems, Technology, and Energy Education for MUREP (ESTEEM); and (2) the TCU Experiential Learning Opportunity program. Together, these programs comprise MUREP's program for American Indian & Alaskan Native STEM Engagement (MAIANSE). Activities funded under these programs help to address critical science education and research needs of TCUs, are helping to build the Native (and national) STEM workforce, and enhance the economic development of tribal communities. ***We strongly urge the Subcommittee to fund the NASA MUREP program for American Indian & Alaskan Native STEM Engagement (MAIANSE) at, or above, the FY 2014 level.***

**Tribal Colleges and Universities: "DOING SO MUCH WITH SO LITTLE"**

TCUs are an essential component of American Indian/Alaska Native (AI/AN) education. Currently, 37 TCUs operate more than 75 campuses and sites in 16 states, within whose geographic boundaries 80 percent of all American Indian reservations and federal Indian trust land lie. They serve students from well over 250 federally recognized tribes, more than 85 percent of whom receive federal financial aid – primarily Pell grants. In total, the TCUs annually serve 160,000 AIs/ANs and other community members through a wide variety of academic and community-based programs. TCUs are public institutions accredited by

independent, regional accreditation agencies and, like all U.S. institutions of higher education, must regularly undergo stringent performance reviews to retain their accreditation status. Each TCU is committed to improving the lives of its students through higher education and to moving AI/ANs toward self-sufficiency. To do this, TCUs serve many roles in their reservation communities, functioning as community centers, libraries, tribal archives, career and business centers, open access computer labs, summer camps, community farms, economic development centers, GED training and testing centers, child and elder care centers, and more.

The federal government, despite its direct trust responsibility and binding treaty obligations, has never fully funded TCU institutional operations as authorized under the Tribally Controlled Colleges and Universities Assistance Act of 1978. Yet despite funding challenges, TCUs are leading the nation in preparing AI/AN nurses and more recently, in preparing teachers for our Native schools. For example, in 2014, half of all AI/AN special education teachers in Montana graduated from Salish Kootenai College. TCUs train other professionals in high-demand fields, including agriculture and natural resources management, human services, IT technicians, and building tradesmen. By teaching the job skills most in demand on our reservations, TCUs are laying a solid foundation for tribal economic growth, with benefits for surrounding communities, and the nation as a whole. But that is not enough. TCU leadership understands that we must do more – we must move beyond simply workforce training. Today, TCUs are tackling the tougher – but much more significant – issue of job creation, because we know that to break the cycle of generational poverty and end the culture of dependency that grips so much of Indian Country, simply preparing students for a very limited labor market is not enough. We must create new industries, new businesses, and a culture of self-sufficiency and innovation. Our job creation initiative is focusing initially on advanced manufacturing, through a partnership with the U.S. Department of Energy, National Laboratories, TCUs, and industry.

Tribal colleges continually seek to instill a sense of hope and identity within Native youth, who one day will lead our tribal nations. Unfortunately, the high school drop-out rate for Native students remains around 50 percent. To help address this alarming reality, TCUs are partnering with the Department of the Interior's Bureau of Indian Education to help create a lasting "college-going culture" in Indian middle and high schools. TCUs are reaching back to create a bridge for Indian students as early as elementary school, encouraging them to abandon any notion of dropping out of high school and instead, to think that the natural course is to finish high school and go on to the local TCU. In addition, TCUs offer Dual Credit courses for high school students, provide math teachers for local high schools as a strategy for improving course delivery, host Saturday academies, after school programs and summer camps for middle and high school students, and at the other end of the spectrum, they offer GED training and testing.

As noted earlier, the TCUs' operations funding is insufficient, and their budgets are further disadvantaged because, on a per student basis, the colleges receive funding for only about 85 percent of their academic enrollments. Approximately 15 percent of the TCUs' collective enrollments are non-Indian students living in the local community, but TCUs receive federal funding based only on Indian students, defined as members of a federally recognized tribe or the biological children of enrolled tribal members. While many TCUs do seek funding from their respective state legislatures for their non-Indian, state-resident students (often referred to as "non-beneficiary" students) successes have been, at best, inconsistent. Given their locations, often hundreds of miles from another postsecondary institution, TCUs are open to all students, Indian and non-Indian, believing that education in general, and postsecondary education in particular, is a catalyst to a better economic future for their areas.

A recent independent, economic impact study proves this, illustrating that TCUs create lasting value from multiple perspectives: students, society, and taxpayers. TCUs elevate their students' lifetime incomes, and this in turn benefits society as a whole by increasing the region's economy and generating a wide array of savings through improved lifestyles. The increased employment benefits taxpayers through increased tax receipts and a reduction in the need for welfare and unemployment benefits. In fact, every dollar spent is quadrupled in the lifetime income of students; society gains over five times the investment in added income and social savings; and the taxpayers get back almost two and a half times the investment. In short, the TCUs are a very sound investment of federal funds.

### **JUSTIFICATIONS:**

- **National Science Foundation/Tribal Colleges and Universities Program (NSF-TCUP) in the Education and Human Resources Directorate:** American Indian students have the highest high school drop-out rates in the country. Those who do pursue postsecondary education often require developmental classes before beginning their studies in earnest. Placement tests administered at TCUs to first-time entering students indicate that 71 percent required remedial math. Of these students, our data indicate that while 63 percent successfully complete the course, many do not do so in one year. Without question, a large proportion of the TCUs' already limited resources is dedicated to addressing the continual failings of K-12 education systems.

To help rectify this, TCUs have developed strong partnerships with their K-12 feeder schools and are actively working, in large part through support from NSF-TCUP grants, to engage young students in community and culturally relevant science and math education and outreach programs. These efforts include weekend academies and summer STEM camps that reinforce and supplement the instructional programs that K-12s are able to provide.

For the past 15 years, NSF-TCUP has provided essential capacity building assistance and resources to TCUs. In the years since the program began, NSF-TCUP has become the primary federal program for building STEM capacity at the TCUs. NSF-TCUP has served as a catalyst for capacity building and positive change at TCUs and the program can be credited with many success stories. Today, American Indians and Alaska Natives are more aware of the importance of STEM to the long-term survival of tribes and tribal communities, particularly in areas such as renewable energy and technology-driven economic development.

The NSF-TCUP, administered by the Education and Human Resources Directorate, is a competitive grants program that enables TCUs to develop and expand critically needed science and math education and research programs relevant to their respective communities. Through this program, TCUs that have been awarded an NSF-TCUP grant have been able to enhance their STEM instructional offerings, workforce development, research, and outreach programs.

For example, NSF-TCUP funds have allowed Northwest Indian College (NWIC) in Bellingham, WA to cultivate a comprehensive science education program that, beginning at the high school level, provides a range of mentoring, peer tutoring, research, service learning, and academic enrichment opportunities that help to grow the next generation of American Indian scientists, science teachers, and leaders. A new NSF-TCUP grant awarded to NWIC is producing a collaborative research partnership for geoscience education with Western Washington University (WWU). This collaborative is designed to

increase and modify the geosciences curriculum at NWIC and establish an educational continuum that will facilitate the articulation of NWIC graduates into the graduate geoscience curriculum at WWU. A shared research agenda will be developed between the two institutions that uses the Bellingham Bay ecosystem as a theme for scholarly studies and place-based instruction. Administrative changes at both institutions will include student mentoring, articulation agreements, co-listed courses, and cross-cultural faculty development.

Despite its advances and successes, funding for the NSF-TCUP program has been stagnant. Therefore, not all of the TCUs have had an opportunity to benefit from this program; in fact the percentage of proposals funded has declined each year beginning in 2004. *We urge the Subcommittee to fund competitively awarded NSF-TCUP grants at a minimum of \$14,000,000.*

- National Aeronautics and Space Administration (NASA) Office of Education/Minority University Research and Education Programs (MUREP) and American Indian & Alaskan Native STEM Engagement (MAIANSE):** College of Menominee Nation (CMN) in Keshena, Wisconsin is one of four tribal colleges to win three-year grant awards designed to improve teaching and learning about global climate change. For this project, CMN is working in collaboration with Argonne National Laboratory, University of Wisconsin-Milwaukee and UW-Platteville, National Council for Science and Environment, and of course, NASA. The overarching goals of the CMN project are to explore climatic factors that affect photovoltaic module performance, and to design an evaluation tool for comparing different solar energy systems. The project has three main objectives: (1) to provide an experiential learning opportunity for four to six STEM students to construct a user-friendly solar energy system evaluation tool, including cost analysis and investment payback schedule; (2) to establish innovative teaching curricula that meld STEM concepts with climate change literacy resulting in combined social science and physical science courses with wide student appeal; and (3) to develop an educational train-the-trainer model as a training outlet for TCU faculty and local middle school teachers to learn how to incorporate climate change topics in the classroom. The project is intended to advance discovery and understanding of climate-related research while promoting teaching, training, and learning of STEM principles. The results of this research will advance knowledge and understanding of the short- and long-term performance of solar energy systems, thereby allowing consumers to make educated choices about solar module return on investment for residential and commercial energy. One of the goals of the MAIANSE programs is to create a diverse and highly skilled climate-related workforce. *Continuation and expansion of these NASA programs will give more TCUs the opportunity to increase their capacity and advance the NASA mission in Indian Country. We strongly urge the Subcommittee to fund NASA-MUREP MAIANSE programs at a minimum of \$3,500,000.*

## **CONCLUSION**

Tribal Colleges and Universities provide access to quality higher education opportunities, including STEM-focused programs, for thousands of American Indians and Alaska Natives. The modest federal investment that has been made in TCUs has paid great dividends in terms of employment, education, and economic development. Continuation of this investment represents one of the most cost-effective strategies for enabling Tribal (and national) STEM-based economic development.

We greatly appreciate your past and continued support of the nation's Tribal Colleges and Universities and your thoughtful consideration of our FY 2017 appropriation request.

**Testimony submitted on behalf of the American Physiological Society, Patricia E. Molina, Ph.D., President.**

The American Physiological Society (APS) thanks you for your sustained support of science at the NSF and NASA. The APS is a professional society, numbering more than 10,000 members, dedicated to fostering research and education as well as the dissemination of scientific knowledge concerning how the organs and systems of the body function. In this letter we offer our recommendations for FY 2017 funding levels for these two agencies.

- **The APS urges you to fund the FY 2017 NSF budget at a net level of \$7.96 billion to prevent further erosion of program capacity.**
- **The APS urges you to restore cuts to NASA's life sciences research budgets and to increase funding for the Human Research Program.**

NSF and NASA support scientific research and technology development programs that are critical to the future technological excellence and economic stability of the United States. Federal investment in research is critically important because breakthroughs in basic and translational research are the foundation for new technologies that help patients, fuel our economy, and provide jobs.

**NSF funds outstanding research and education programs**

NSF provides support for approximately 20% of all federally funded basic science and is the major source of support for non-medical biology research. This includes integrative, comparative, and evolutionary biology, as well as interdisciplinary biological research. Time and time again we have seen that the knowledge gained through basic biological research is the foundation for more applied studies that sustain the health of animals, humans and ecosystems. NSF-funded research has led to countless new discoveries that could not have been envisioned when the research began. Nevertheless, these unforeseen applications have had enormous impact on science, health and the economy worlds.

The majority of the NSF funding is awarded through competitive, merit-based peer review. Merit review ensures that the best possible projects are supported. Both the scientific reviewers and NSF program staff consider not only the intellectual merit of each research proposal, but also its broader impacts. NSF's criteria for broader impact address the potential for research to benefit society or to achieve specific outcomes. NSF has an exemplary record of accomplishment in terms of funding research that produces results with far-reaching potential. Since its inception in 1950, NSF has supported the work of 217 Nobel Laureates, including the 2015 winners of the Chemistry and Economics prizes.

Biological research is just one part of the NSF portfolio. The APS believes that each of the NSF directorates support research that is critical to NSF's mission "to promote the progress of science; to advance the national health, prosperity, and welfare; to secure the national defense..." Collaboration among scientific disciplines is increasingly recognized as the best and most efficient way to advance science. This will only be possible with strong support for all disciplines of research.

In addition to funding innovative research in labs around the country, the NSF education programs foster the next generation of scientists. The APS is proud to have partnered with NSF in programs to provide training opportunities and career development activities to enhance the participation of underrepresented minorities in science. We believe that NSF is uniquely suited to foster science education programs of the highest quality, and we recommend that Congress continue to provide federal funds for science education through the NSF.

The APS joins the Federation of American Societies for Experimental Biology (FASEB) in recommending that the NSF be funded at a level of \$7.96 billion in FY 2017. The NSF is poised to address major challenges facing our nation and our world in the 21<sup>st</sup> Century. The agency is already engaged in crucial efforts to enhance understanding of everything from the human brain to how the climate is changing, but it needs adequate resources to continue to carry out its mission.

### **Support for Life Sciences Research should be increased at NASA**

NASA sponsors research across a broad range of the basic and applied life sciences, including gravitational biology, biomedical research and the Human Research Program (HRP). The gravitational biology and biomedical research programs explore fundamental scientific questions through research carried out both on Earth and aboard the International Space Station, which provides an environment for the conduct of experiments in space. NASA's HRP conducts focused research and develops countermeasures with the goal of enabling safe and productive human space exploration.

During prolonged space flight, the physiological changes that occur due to weightlessness, increased exposure to radiation, confined living quarters, and alterations in eating and sleeping patterns can lead to debilitating conditions and reduced ability to perform tasks. APS scientists are actively engaged in research that explores the physiological basis of these problems with the goal of contributing to the identification of therapeutic targets and development of novel countermeasures. The knowledge gained from this research is not only relevant to humans traveling in space, but is also directly applicable to human health on Earth. For example, some of the muscle and bone changes observed in astronauts after prolonged space flight are similar to those seen in patients confined to bed rest during periods of critical illness as well as during the process of aging.

NASA is the only agency whose mission addresses the biomedical challenges of human space exploration. Over the past several years, the amount of money available for conducting this kind of research at NASA has dwindled. The number of projects and investigators supported by NASA through the HRP has declined by 30% over the last twelve years; similarly, the number of projects and investigators supported through the Space Biology program has declined by more than 50% over that same period. (<https://taskbook.nasaprs.com/Publication/>)

In the past, appropriations legislation specified funding levels for biomedical research and gravitational biology, but recent internal reorganizations at NASA have made it difficult to understand how much money is being spent on these programs from year to year. The APS recommends that funding streams for these important fundamental research programs be clearly identified and tracked within the NASA budget. The APS also recommends restoration of cuts to



peer-reviewed life sciences research to allow NASA-funded scientists to conduct research that will be critical in not only supporting the success of future long-range manned space exploration but also leading to innovative discoveries that can be applied to Earth-based medicine. As highlighted above, investment in the basic sciences is critical to our nation's technological and economic future. This innovative engine of research fuels our world leadership and our economy. The APS urges you to make every effort to provide these agencies with increased funding for FY 2017.



**ASSOCIATION OF STATE FLOODPLAIN MANAGERS,  
INC.**

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**Outside Witness Testimony for Programs under the National Oceanic and Atmospheric  
Administration for Fiscal year 2017**

**Submitted To:**

House Committee on Appropriations

Subcommittee on Commerce, Justice, and Science, and Related Agencies

**Submitted by:**

Chad Berginnis, Executive Director, Association of State Floodplain Managers

The Association of State Floodplain Managers (ASFPM) is pleased to have the opportunity to comment on the Fiscal Year 2017 budget request of the National Oceanic and Atmospheric Administration (NOAA) and National Weather Service (NWS). ASFPM is a non-profit association of state and local officials as well as engineers, planners and other professionals who support those officials. The ASFPM has 17,000 members nationwide and 36 chapters that represent 41 states. The mission of the membership is reduction of loss of life and property due to flooding.

Today we are writing in support of programs critical to flood loss reduction and floodplain protection under NOAA. Today, our nation's coasts are as vital for our future as they are vulnerable. As a result of their increasing recreational, residential, and economic appeal, there are more pressures on our coastal and ocean resources. This demand, combined with an increase in natural hazards such as sea level rise, extreme weather, and other flooding events, highlight the danger of losing these invaluable national assets. Despite the difficult budgetary times, adequate and sustained funding is needed to support the key programs that are on the front lines of this daily battle, which continually advance coastal and ocean science, research, and technology to manage our coastal and ocean resources for future generations.

NOAA Programs engaged in these important efforts and working to balance the protection of coastal and ocean resources with the sustainable development of the coasts include the: Digital Coast Partnership, Coastal Zone Management Program, Regional Coastal Resiliency Grants, and National Estuarine Research Reserves and the National Weather Service. These programs provide direct grants to states, funding for important research, and provide critical data during flood events – all important to managing flood risk and reducing flood losses.

### Digital Coast Partnership

The NOAA office for Coastal Management (OCM – within the National Ocean Service) has been leading the innovative Digital Coast Partnership over the past several years. The Digital Coast is both a partnership and information management initiative whereby NOAA leverages the partnership's ideas, resources, and feedback to provide relevant, science based tools and services (i.e., informative data sets, tools, training) for use by floodplain managers, planners, and decision makers. The freely available data and tools are made available through the Digital Coast website and can be used by state regional and local entities in all of their flood loss reduction, and ecosystem management. ASFPM is proud to be a founding member of the Digital Coast Partnership along with other national organizations such as the American Planning Association, the Coastal States Organization, Urban Land Institute, National Association of Counties, the Nature Conservancy and others.

Tools and data created by the Digital Coast will be critical to long term coastal community resiliency and adaptation in the face of threats such as more intense tropical storms and sea level rise. **Funded out of the Office of Coastal Management operational budget, ASFPM wholeheartedly supports full resourcing of the Digital Coast Partnership and its continuation.**

### Coastal Zone Management Program

This funding will be allocated among the 34 states and territories that have approved coastal zone management programs. Pursuant to the Coastal Zone Management Act (CZMA), states partner with NOAA to implement coastal zone management programs designed to balance the need to maintain productive coastal and ocean resources with the need for the sustainable development of coastal communities.

States have the flexibility to develop programs, policies, and strategies targeted to their state priorities while concurrently advancing national goals. Under the CZMA program, the states receive grants from NOAA, which are then matched with state funding and then often further leveraged with private and local funds. These grants have been used to support and enhance coastal economies by resolving conflicts between competing coastal uses, reducing environmental impacts of coastal development, and providing critical assistance to local communities in coastal planning and resource protection.

State coastal zone management programs reflect a unique and successful federal-state partnership. Coastal management has become a national priority, as they are critical to building coastal resilience against extreme weather events and educating and guiding communities to build their homes and businesses in ways that minimize the threat of loss. Events like Superstorm Sandy and Hurricane Katrina reinforced the importance of planning ahead. Coastal zone management programs ensure that the national interest in a resilient coast is incorporated in state actions, while respecting the sovereignty, different priorities, and geographic variations of our diverse states.

**Because the CZMA state grants have essentially remained at an even funding level for a decade, resulting in decreased capacity in state coastal zone management programs and less funding available to communities, ASFPM supports increased funding for this important program.**

#### Regional Coastal Resiliency Grants (RCRG)

**ASFPM supports the President's request that the RCRG program be funded at \$20 million in FY17.** The RCRG program provides grants that are being used to fund projects that are helping coastal communities to better prepare for, recover from and mitigate against extreme weather events, climate hazards, and changing ocean conditions. The focus is on comprehensive regional approaches that use science-based solutions and rely on collaborative partnerships to ensure success. In FY16 there were over 130 applications for \$100 million.

#### National Estuarine Research Reserve System

ASFPM appreciates the investment Congress has made in the National Estuarine Research Reserve System over the past 42 years. Because of your support, this system has grown into a network 28 protected places protecting over 1.3 million acres of land and water in perpetuity where more than 36,000 people use research reserves to address critical challenges like how to balance conservation with economic growth, plan for changing sea levels and extreme storms that will lead to increased flooding, protect nursery habitat that supports fishing, and prepare our children to be wise stewards of these precious resources in the future. This unique state-federal partnership brings the scientific expertise and financial investment of NOAA into coastal communities across the country. Investments in the research reserves support locally implemented science-based coastal resource management, research, and education programs to meet national priorities as mandated by Congress in the Coastal Zone Management Act of 1972.

#### National Weather Service (NWS)

Finally, the National Weather Service anchors a critically important aspect of flood loss reduction – flood forecasting and flood warning. The services, tools and data provided by the NWS can help communities and individuals reduce flood exposure through early warnings. Warnings for major floods occurring in 2015 in Texas, South Carolina, Missouri and Illinois provided important and actionable information to property owners for evacuation and protection of vulnerable assets. **ASFPM supports the President's request in FY17 to implement the Integrated Water Prediction initiative and funding request of an increase of \$12.25 million.**

Thank you for considering the views of the Association of State Floodplain Managers. We would be glad to respond to any questions. Please contact Chad Berginnis, ASFPM Executive Director at [cberginnis@floods.org](mailto:cberginnis@floods.org) or at 608-828-3000.



**AMERICAN  
SOCIETY FOR  
MICROBIOLOGY**

*Public and Scientific Affairs Board*

Statement of the American Society for Microbiology  
Submitted to the House Committee on Appropriations, Subcommittee on Commerce,  
Justice and Science and Related Agencies, on the Fiscal Year 2017 Appropriation for the  
National Science Foundation

March 10, 2016

The American Society for Microbiology (ASM) recommends that Congress approve a budget of \$8 billion for the National Science Foundation (NSF) for fiscal year (FY) 2017. This level of funding would provide 4 percent real growth in NSF research funding. The NSF supports one quarter of all federally funded research at US colleges and universities; or more than 1,800 colleges, universities and other institutions in all 50 states, the District of Columbia and Puerto Rico. In 2017, NSF will directly support about 377,000 researchers, postdoctoral fellows, trainees, teachers and students. NSF funding is irreplaceable for much of the basic research that underlies US innovation.

### **NSF Programs Expand US Science & Engineering**

Over 90 percent of the FY 2017 NSF budget would fund research, education and related activities, largely as competitive awards in the form of grants or cooperative agreements. The budget request includes a special focus on support for early career investigators. More than three quarters of the NSF's budget is allocated to US colleges and universities, not only directly underwriting research projects but also training the nation's future scientists and engineers. Other recipients of NSF funding include; private industry, all levels of government, nonprofits and international organizations.

Sustained NSF investments in basic research and the people who make the discoveries are crucial to stimulating the US economy, enhancing the lives of people and shaping a future improved by science and technology. NSF grants have supported nearly 220 Nobel Prize winners. In FY 2017, the agency expects to evaluate more than 52,000 research proposals and make over 12,000 new awards. The proposed funding levels in the Administration's NSF budget would allow an estimated 800 additional grants, raising funding success to a projected 23 percent rate.

### **NSF Support Advances Biological Sciences**

The NSF funds nearly 70 percent of basic biology research at the nation's academic institutions. Advances in bioscience and environmental biology clearly depend heavily upon NSF appropriations. Broad support for biology produces knowledge essential to the nation's agriculture, health and environment. NSF supported research has already

spawned many innovations that push today's growing bio economy in areas such as biofuels, bio renewable chemicals and nanotechnology.

In the FY 2017 request, the Directorate for Biological Sciences (BIO) receives \$790.5 million, or a 6.2 percent increase from FY 2016. In FY 2017, BIO expects to receive 6,200 proposals for competitive awards, approving 1,600 new awards. BIO funding includes studies of molecules, cells, tissues, organs, organisms, populations, communities, ecosystems and the global biosphere. The directorate regularly partners in multidisciplinary efforts with programs in chemistry, engineering, mathematics, computer sciences and more. It is the nation's principal supporter of basic studies in environmental biology, biodiversity and plant biology. The FY 2017 budget will be distributed via BIO's five divisions: Molecular and Cellular Biosciences (MCB), Biological Infrastructure (DBI), Environmental Biology (DEB), Integrative Organismal Systems (IOS) and Emerging Frontiers (EF). BIO also supports the Plant Genome Research Project (PGRP) and the National Ecological Observatory Network (NEON), as well as myriad programs for education and career development in the biological sciences.

In FY 2017, BIO will solicit research proposals that align with the directorate's new Rules of Life emphasis that includes the genotype to phenotype challenge; plant and microbial sciences, including study of the microbiome; synthetic biology and the origin of life. The directorate expects extensive integration with mathematical and physical sciences, computer science and engineering. As another example of BIO's broad strategy, MCB's support of synthetic biology encourages work with other divisions and directorates to develop tools that advance bio manufacturing, biofuels and novel biomaterials for our bio economy. This includes additional investment related to the CRISPR/Cas9 genome editing technology.

The ASM strongly supports a FY 2017 increase for microbiome research of \$2.7 million, for a total investment of \$16.4 million. NSF supported studies have already contributed to the federal strategy to understand and utilize microbiomes, which are the collective microorganisms that live in, on and around plants and animals. Microbiome researchers investigate the role of microbes in plant and animal function, productivity, health and resilience to environmental change, as well as microbes' role in soil and marine ecosystems. Studies are highly diverse in scale and subject; for example, metagenomics (the entirety of collective genomes in microbial communities), the composition of individual communities and collective metabolic activity within a specified microbiome.

In the past year, NSF supported research on microbiomes has reported on how the composition of microbial communities may respond to changing conditions, how plant defense hormones help determine root microbiomes comprising microbes that protect against pathogens, how the gut microbiomes of baboons living together become similar and the suspected link between high fat and high sugar diets, intestinal bacteria and cognitive function.

NSF supported projects frequently incorporate microorganisms as research tools or targets, integral to discoveries in health, agriculture, environment, sustainability, bio

manufacturing and much more. Examples from the past year point to NSF's unique role in U.S. research:

- Scientists have modified a plant gene that normally helps fight bacterial infection (*Pseudomonas syringae*) to instead fight viral infection (turnip mosaic and tobacco etch viruses), the first time a plant's innate defense system has been altered to confer resistance to a new disease.
- Bacteria in biofilms communicate with one another via electrical signaling similar to neural communications in the brain, according to researchers who earlier described how biofilm communities internally resolve resource shortages and metabolic stress.
- The first atlas of airborne microbes across the continental United States identified more than 110,000 bacterial and 55,000 fungal species, baseline data with implications for health and disease in the public, agriculture and the environment.

### **NSF Partnerships Promote Cross Cutting Research**

Among the many strengths of NSF's FY 2017 portfolio is the agency's ambitious vision of cross cutting discovery. NSF excels at stimulating multidisciplinary research that draws best practices and leading edge technologies from diverse scientific and engineering disciplines, often leveraging systems level strategies. Several FY 2017 efforts epitomize greater emphasis on creative partnerships:

- Expanded agency wide efforts and external partnerships will accelerate the INFEWS initiative (Innovations at the Nexus of Food, Energy and Water Systems).
- The NSF wide BioMaPS program, with an emphasis in synthetic biology at the intersection of biology, engineering and physical sciences, expects new potentially valuable outcomes. Many synthetic biology products are currently poised for commercialization, such as biofuels, drugs and food additives. New research promises advances in important economic sectors like agriculture, industry and medicine.
- BIO will assume full operation of the soon to be completed NEON network for ecological research, built on partnerships with other NSF entities and private organizations. Using sensor sites and cyberinfrastructures, it is the first research platform to collect standardized data nationwide.
- Scientists with the Ecology and Evolution of Infectious Diseases Initiative (EEID), a joint NIH, NSF, Department of Agriculture (USDA) effort, are studying the mosquito borne transmission of Zika and dengue viruses in Ecuador, in the context of socioecological and environment's effects on disease spread.

- The new BIO USDA Plant Biotic Interactions (PBI) program will make its first grant awards during FY 2017, in areas that include plant microbiomes, pathogens and defenses.

The ASM appreciates the opportunity to submit testimony and urges Congress to fund NSF with \$8 billion in FY 2017. NSF funded research is a cornerstone of US innovation in science and technology with vast benefits across the nation and around the world.





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**American Society of Mechanical Engineers (ASME)  
Outside Witness Testimony  
Prepared for the Subcommittee on Commerce, Justice, and Science, and Related Agencies**

**Position Statement on the  
National Institute of Standards and Technology (NIST) Fiscal Year 2017 Budget Request**

**Submitted by the  
Manufacturing Public Policy (MPP) Task Force, ASME Committee on Government  
Relations Inter-Sector Committee on Federal R&D, Public Affairs and Outreach Sector**

**March 25, 2016**

As the federal budget faces increased scrutiny due to sequester spending caps, it is important that research and development remain among the highest priorities for domestic discretionary spending. Scientific and engineering research have long been the foundation of our nation's economic growth and prosperity and have positioned the U.S. as a global leader in innovation. Our country's economic strength derives from our ability to produce the world's best scientists and engineers, nurture new ideas and innovation, and develop new technologies and industries. Now, however, with other countries investing more heavily in basic and applied research, it is becoming difficult for the U.S. to keep pace. If America is to remain a global economic leader, we must continue to invest in the scientific and engineering enterprise that generates new technologies, industries, and jobs. The ASME Manufacturing Public Policy (MPP) Task Force strongly supports the President's budget request and urges Congress to fully fund basic research and the programs outlined below so that the full national security and economic benefits of our domestic innovations can be realized.

**Overview of NIST's Fiscal Year 2016 Budget Request**

<b><i>\$ In Millions</i></b>	<b><i>FY16 Enacted</i></b>	<b><i>FY17 Requested</i></b>	<b><i>Increase (%)</i></b>	<b><i>Increase (\$)</i></b>
<b>NIST</b>	\$964	\$1,000	5.2	\$36
<b>STRS</b>	\$690	\$730.5	5.9	\$40.5
<b>ITS</b>	\$155	\$189	22	\$34
<b>NNMI</b>	\$25	\$47	88	\$22
<b>MEP</b>	\$130	\$142	9.2	\$12

The MPP Task Force strongly supports the Administration's budget request of \$1 billion for NIST in FY17. This represents a 5.2 percent or \$36 million increase over FY16 enacted levels.

***The National Network for Manufacturing Innovation (NNMI)***

The MPP Task Force strongly supports dedicating \$47 million to funding new and established National Network for Manufacturing Innovation (NNMI) Institutes. ASME has long supported the creation of a national network of manufacturing Institutes to work towards bridging the gap between basic research and market impact of technology. The Administration's continued efforts

to fund Department of Commerce-led NNMI Institutes through NIST reflects the vital role NIST plays in the Administration's goal of creating a fully operational innovation pipeline.

The NNMI achieves this goal by providing a "manufacturing research infrastructure where U.S. industry and academia collaborate to solve industry-relevant problems. The NNMI is a network of Institutes for Manufacturing Innovation, each with a unique focus but a common goal to create, showcase, and deploy new capabilities and new manufacturing processes."<sup>1</sup>

In addition to the \$47 million in discretionary funds for NNMI, the President's budget requests an additional \$1.9 billion in mandatory funding for NNMI over the next 10 years to achieve the Administration's goal of a national network of 45 manufacturing Institutes.

### ***Hollings Manufacturing Extension Partnership (MEP)***

The MPP Task Force has long supported MEP as a catalyst for technological innovation and is pleased with the Administration's request of \$142 million. MEP provides support to small and medium-sized manufacturers (SMMs) across the United States and Puerto Rico to develop sustainable practices in the U.S. These SMMs are crucial to the U.S. economy as they support and create a significant number of jobs focused in product commercialization, lean production, process improvements, and supply chain optimization.

### ***Construction of Research Facilities (CRF)***

NIST laboratories remain a critical resource that is vital to the economic health and national security of the United States, as outlined in the President's Innovation Agenda, inspired by the original "America COMPETES Act of 2007" (P.L. 110-69). The NIST engineering laboratory "promotes the development and dissemination of advanced technologies, guidelines, and services to the U.S. manufacturing and construction industries through activities including measurement science research, performance metrics, tools and methodologies for engineering applications, and critical technical contributions to standards and codes development." The up-keep and modernization of our laboratories is at the very crux of the research done at NIST, and without proper funding for our facilities and equipment, important programs suffer. The MPP Task Force supports the Administration's request for \$95 million in discretionary funds for Construction of Research Facilities in FY17.

### **NIST's Standards Mission**

Part of the mission of NIST is to promote the use of American standards, conformity assessment programs and technology in countries and industries around the world as a means of enhancing U.S. competitiveness and opening new markets for U.S. products and services. Standards provide technical definitions and guidelines for design and manufacturing. They serve as a common, global language, define quality and establish safety criteria. In the United States, standards are developed by private-sector organizations in close collaboration with representatives from industry, government, and academia. These standards are used by industry and are frequently adopted by government agencies as a means of establishing regulatory requirements. They are vital to the economic health of many industries, and – more importantly –

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<sup>1</sup> Manufacturing.gov

they help to ensure the health and safety of the American people and citizens in countless nations around the world.

As a standards developer, ASME is in an outstanding position to describe the value of NIST standardization efforts and their impact on American commerce. Over the years, the Department of Commerce and NIST have played an indispensable role in ensuring acceptance by other nations of U.S.-developed standards that continue to identify and incorporate technological advances and that also reflect changing needs for industry, regulation, and public safety. Unlike in the U.S. where standards development is largely the province of private sector organizations, standards development in many other countries is undertaken with strong government support. The U.S. voluntary consensus standards process enables innovation, reduces redundancy in public and private sector research, and reduces government costs. The governments of many of our key trading partners invest significant resources to promote acceptance of competing standards (developed by organizations in those countries) in the global marketplace. It is therefore essential that the U.S. government, in partnership with private sector standards development organizations, strengthen its commitment to ensuring adequate representation of U.S. interests in international standards negotiations.

Enabling U.S. manufacturers to design and build to one standard or set of standards increases our competitiveness in the world market. Similarly, decisions made in standards bodies outside of the United States have a profound impact on the ability of U.S. companies to compete in foreign markets. The ability of NIST to assist U.S. standards developers in their negotiations with international standards organizations is important to the U.S. business community. The U.S. must be a full participant in global standards development if our industries are to compete effectively in a world market. We believe that NIST plays a unique and crucial role in maintaining, and growing, the competitive edge of U.S. industry in the emerging landscape of the high technology manufacturing sector.

## **Conclusion**

The Administration's commitment to NIST appears to be strong, as demonstrated by its willingness to support increases for key NIST initiatives for FY17. The full funding of the NNMI and MEP programs are crucial for the U.S. to remain competitive globally over the next several decades. The Task Force remains strongly supportive of these initiatives as well as the underlying goals of NIST as they relate to advanced manufacturing and technological innovation.

## **Introduction to ASME and the MPP Task Force**

The National Institute of Standards and Technology (NIST) Task Force of the Committee on Government Relations Inter-Sector Committee on Federal R&D of the ASME Public Affairs and Outreach Sector is pleased to have this opportunity to provide comments on the FY17 budget request for NIST. The MPP Task Force and ASME Standards & Certification have a long-standing relationship with NIST and thus recognize NIST as a key government agency that contributes significantly to the development and application of technology.

Founded in 1880 as the American Society of Mechanical Engineers, ASME is a worldwide engineering society of over 140,000 members focused on technical, educational and research issues. ASME conducts one of the world's largest technical publishing operations, holds approximately 30 technical conferences and 200 professional development courses each year, and sets many industry and manufacturing standards.

Mechanical engineers play a key role in the research, technology development, and innovation that influence the economic wellbeing of the nation. ASME has supported the mission of NIST since it was founded in 1901, as the National Bureau of Standards. In fact, ASME was instrumental in establishing the Department of Commerce, NIST's parent agency. The technical programs of NIST are unique in that they foster government and industry cooperation through cost-sharing partnerships that create long-term investments based on engineering and technology. These programs are aimed at providing the technical support so vital to our nation's future economic health.

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*Statement approved by the ASME Manufacturing Public Policy Task Force (MPPTF).*

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ASME is a non-profit technical and educational organization with more than 140,000 members globally. The Society's members work in all sectors of the economy, including industry, academia, and government. This position statement represents the views of the MPP Task Force of the Committee on Government Relations Inter-Sector Committee on Federal R&D of the ASME Public Affairs and Outreach Sector and is not necessarily a position of ASME as a whole.

Tyrone C. Spady, PhD  
 Director of Legislative and Public Affairs  
 American Society of Plant Biologists  
 tspady@aspb.org



# American Society of Plant Biologists

*Cultivating a better future through plant biology research*

## **Official Written Testimony in support of the National Science Foundation's Fiscal Year 2017 Budget**

Submitted to the Subcommittee on Commerce, Justice and Science, and  
 Related Agencies  
 Committee on Appropriations  
 United States House of Representatives  
 March 31, 2016

**On behalf of the American Society of Plant Biologists (ASPB), I submit this testimony for the official record to support the requested level of \$8 billion for the National Science Foundation (NSF) for fiscal year (FY) 2017.** ASPB recognizes the difficult fiscal environment our nation faces, but we believe that sustained investments in scientific research will be a critical step toward economic recovery and continued global competitiveness for our nation.

ASPB would like to thank the Subcommittee for its consideration of this testimony and for its strong support for the research mission of NSF.

Our testimony will discuss:

- Plant biology research as a foundation for addressing food, fuel, environment, and health concerns;
- The rationale for robust funding for NSF to maintain a well-proportioned science portfolio; and
- The rationale for continued funding of NSF education and workforce development programs that provide support for the future scientific and technical expertise critical to America's competitiveness.

ASPB is an organization of professional plant biology researchers, educators, graduate students, and postdoctoral scientists with members across the nation and throughout the world. A strong voice for the global plant science community, our mission—achieved through work in the realms of research, education, and public policy—is to promote the growth and development of plant biology, to encourage and communicate research in plant biology, and to promote the interests and growth of plant scientists in general.

### **Food, Fuel, Environment, and Health: Plant Biology Research and America's Future**

Plants are vital to our very existence. They harvest sunlight, converting it to chemical energy for food and feed; they take up carbon dioxide and produce oxygen; and they are the primary producers on which most life depends. Indeed, plant biology research is making many fundamental contributions in the areas of energy security and environmental stewardship; the continued and sustainable development of better foods, fabrics, and building materials; and in the understanding of biological principles that underpin improvements in the health and nutrition of all Americans.

In particular, plant biology is at the interface of numerous scientific breakthroughs. For example, with high throughput experimental approaches facilitating extraordinary syntheses of information that are NSF-supported, plant biologists are using computer science applications to make tremendous strides in our understanding of complex biological systems, ranging from single cells to entire ecosystems. Understanding how plants function ultimately will result in better and more productive crops, new sources of fuel, and the development of better medicines to treat diseases like cancer.

Despite the significant positive impact plants have on our nation's economy and in addressing some of our most urgent challenges, including food and energy security, federal investments in fundamental plant biology research are modest. Still scientists have maximized and leveraged this funding in order to understand the basic function and mechanisms of plants, providing a foundation for vital advances in practical applications in agriculture, health, energy, and the environment.

To address future societal challenges that might be mitigated through investments in plant biology research and to prioritize community research efforts, ASPB organized a two-phase Plant Science Research Summit with funding from NSF, the U.S. Department of Agriculture, the Department of Energy, and the Howard Hughes Medical Institute that resulted in the development of a community agenda document: *Unleashing a Decade of Innovation in Plant Science: A Vision for 2015-2025*

([plantsummit.files.wordpress.com/2013/07/plantsciencedecadalvision10-18-13.pdf](http://plantsummit.files.wordpress.com/2013/07/plantsciencedecadalvision10-18-13.pdf)). The report, part of an ongoing and iterative process, puts forth a ten-year consensus agenda to fill critical gaps in our understanding of plant biology in order to address the grand challenges we face. As a research community, our vision is to create plant systems that are flexible and adaptable to new and existing challenges by increasing the predictive and synthetic abilities of plant biology. In achieving these goals, the plant science research community will make significant contributions to:

- exploring, conserving and utilizing our natural resources;
- protecting, maintaining and improving crop productivity; and
- creating new plant-inspired industries.

### **Robust Funding for the National Science Foundation**

***ASPB encourages the greatest possible support for the Directorate of Biological Sciences (BIO) and proportional funding increases across all of the scientific disciplines NSF supports.***

As scientific research becomes increasingly interdisciplinary with permeable boundaries, a diverse portfolio at NSF is needed to maintain transformational research and innovation.

NSF funding for plant biology specifically enables the scientific community to address cross-cutting research questions that could ultimately solve grand challenges related to a sustainable food supply, energy security, and improved health and nutrition. This notion is reflected in the National Research Council's report *A New Biology for the 21st Century*.

NSF BIO is a critical source of funding for scientific research, providing the majority of the federal support for non-medical basic life sciences research at U.S. academic institutions and beyond. BIO supports research ranging from the molecular and cellular levels to the organismal, ecosystem, and even biosphere levels. These investments continue to have significant pay offs, both in terms of the knowledge directly generated and in deepening collaborations and fostering innovation among communities of scientists. This increase is needed as BIO received only a one percent increase in FY 2016, and a two percent increase in FY 2015, which when adjusted for inflation, actually represents a loss in purchasing power.

The Biological Sciences Directorate's Plant Genome Research Program (PGRP) is an excellent example of a high impact program that has laid a strong scientific research foundation for understanding plant genomics as it relates to energy (biofuels), health (nutrition and functional foods), agriculture (impact of changing climates on agronomic ecosystems), and the environment (plants' roles as primary producers in ecosystems). ***ASPB asks that the PGRP be funded at the highest possible level and have sustained funding growth to address 21<sup>st</sup> century challenges.*** Furthermore, in light of the need to create cyberinfrastructure across a wide range of scientific disciplines, ASPB supports efforts to homogenize metadata formats and enhance data sharing.

ASPB also supports the proposed new program, Rules of Life, within the BIO Directorate. This program would support research on genotype to phenotype studies, as well as plant science, microbiome, and synthetic biology. Research supported by Rules of Life will encourage using quantitative approaches to advance biological research, increasing the use of innovative new methods and interdisciplinary approaches to complex research questions. ***ASPB supports the proposed \$13 million for the new Rules of Life program within NSF BIO.***

Without significant and increased support for BIO and the NSF as a whole, promising fundamental research discoveries will be delayed and vital collaborations around the edges of scientific disciplines will be postponed, thus limiting the ability to respond to the pressing scientific problems that exist today and the new challenges on the horizon. Addressing these scientific priorities also helps improve the competitive position of the United States in a global marketplace.

### **Continued Support for NSF Education and Workforce Development Programs**

The National Science Foundation is a major source of funding for the education and training of the American scientific workforce and for understanding how educational innovations can be

most effectively implemented. NSF's education portfolio impacts students at all levels, including K–12, undergraduate, graduate, and postgraduate, as well as the general public.

***ASPB urges the Subcommittee to support expanding NSF's fellowship and career development programs—such as the Postdoctoral Research Fellowships in Biology, the Graduate Research Fellowship (GRF) and the Faculty Early Career Development (CAREER) programs—thereby providing continuity in funding opportunities for the country's most promising early career scientists.***

Furthermore, the nearly seven-year median for a life-science PhD in the United States contrasts with other nations where students specialize earlier, thus entering doctoral programs with more uniform and advanced scientific foundations. To focus more attention on new types of skills, such as private-sector experience and data-science training, NSF may wish to consider encouraging universities to tailor undergraduate curricula to allow committed students to enter PhD programs without needing a significant amount of textbook-style coursework. One way to do so would be to offer a seamless, seven-year curriculum that combines bachelor's and doctoral education, thereby making the career path more attractive and reducing costs to investigators, institutions, and funding bodies. NSF may wish to fund exploration and development of this kind of program or curriculum.

ASPB urges support for NSF to further develop programs aimed at increasing the diversity of the scientific workforce by leveraging professional scientific societies' commitment to provide a professional home for scientists throughout their education and careers and to help promote and sustain broad participation in the sciences. Discrete focused training and infrastructure support programs for Hispanic Serving Institutions, Historically Black Colleges and Universities, and Tribal Colleges and Universities remain vitally important, because they foster a scientific workforce that reflects the U.S. population.

ASPB urges support for education research that enhances our understanding of how educational innovations can be sustainably and most effectively implemented in a variety of settings. NSF Education and Human Resources programs provide opportunities to expand NSF's research and evaluation efforts to address scale-up and sustainability. ***ASPB encourages continued support for education research programs within NSF's Education and Human Resources portfolio with a focus on understanding how previous investments in educational strategies can be made most effective.***

Grand research challenges will not be resolved in a year, an administration, or a generation, but will take continued attention and investment at federal research agencies, such as the National Science Foundation, over decades.

Thank you for your consideration of ASPB's testimony. For more information about ASPB, please visit us at [www.aspb.org](http://www.aspb.org).



Testimony of Anthony F. (Bud) Rock  
 President and Chief Executive Officer, Association of Science-Technology Centers  
 submitted to the House Appropriations Subcommittee  
 on Commerce, Justice, Science, and Related Agencies  
 March 25, 2016

**Seeking Support for the Following Agencies and Programs in FY 2017:**  
**National Aeronautics and Space Administration – CP4SMP+**  
**National Oceanic and Atmospheric Administration – B-WET and CEG/ELG**  
**National Science Foundation – AISL**

Introduction

Chairman Culberson, Vice Chair Aderholt, Acting Ranking Member Honda, and Members of the Subcommittee, thank you for the opportunity to submit written testimony for the record. My name is Anthony (Bud) Rock, and I serve as the President and Chief Executive Officer of the Association of Science-Technology Centers (ASTC). My testimony today addresses the importance of science, technology, engineering, mathematics (STEM), and environmental education, and will focus specifically on the fiscal year (FY) 2017 budgets for four specific programs at three federal agencies over which your subcommittee has jurisdiction: (1) the Competitive Program for Science Museums, Planetariums, and NASA Visitor Centers Plus Other Opportunities (CP4SMP+) at the National Aeronautics and Space Administration (NASA), which would not be funded under the President's FY 2017 request; the Bay-Watershed Education and Training (B-WET) Regional Programs and Competitive Education Grants (CEG)/Environmental Literacy Grants (ELG) programs at the National Oceanic and Atmospheric Administration (NOAA), which would not be funded under the President's FY 2017 request; and the Advancing Informal STEM Learning (AISL) program at the National Science Foundation (NSF), which would receive \$62.5 million under the President's FY 2017 request (although only \$55 million of that amount is being requested from traditional discretionary spending).

Our Request

On behalf of ASTC and the nearly 400 science centers and museums we represent here in the United States, I urge the Subcommittee to continue its strong support for critical STEM and environmental education programs within NASA, NOAA, and NSF as the Commerce, Justice, Science, and Related Agencies Appropriations Bill for FY 2017 moves forward. Specifically, I urge you to:

- Provide \$10 million for the Competitive Program for Science Museums, Planetariums, and NASA Visitor Centers Plus Other Opportunities at the National Aeronautics and Space Administration.
- Provide \$12 million for the Bay-Watershed Education and Training Regional Programs and \$8 million for the Competitive Education Grants/Environmental Literacy Grants programs at the National Oceanic and Atmospheric Administration.
- Provide \$62.5 million for the Advancing Informal STEM Learning program at the National Science Foundation.

- Continue to thoroughly examine any proposals that would seek to consolidate, reorganize, or eliminate federal STEM and environmental education programs in an effort to ensure that stakeholder input has been sought and that proven, successful programs are maintained.

Before providing more detail about ASTC and the science center and museum field, I want to first offer a brief snapshot of these federal programs and why they are so vital to communities across the country.

#### National Aeronautics and Space Administration

NASA's **Competitive Program for Science Museums, Planetariums, and NASA Visitor Centers Plus Other Opportunities** provides support for education or research engagement projects, exhibits, and/or partnerships with K-12 schools to support inquiry- or experiential-based activities led by informal education institutions—like science centers and museums—that feature NASA missions, science, engineering, explorations, or technologies.

Though Congress—and this Subcommittee in particular—have been very supportive of this program since its inception in FY 2008, NASA has not indicated how much (if any) FY 2015 or FY 2016 funds will be available for new grants. The agency did, however, recently invite eligible grantees to submit new proposals for funding, which were due on December 7, 2015. With regard to FY 2017 funding, the President did not include any funding for the program in his budget request. **I encourage the Subcommittee to continue its strong support for the CP4SMP+ by providing \$10 million for FY 2017.**

#### National Oceanic and Atmospheric Administration

NOAA's **Bay-Watershed Education and Training Regional Program** offers competitive grants to promote locally relevant, authentic experiential learning focused on K-12 audiences. The program serves seven areas of the country (California, the Chesapeake Bay, the Great Lakes, the Gulf of Mexico, Hawai'i, New England, and the Pacific Northwest) and supports activities inside and outside of the classroom while seeking to increase the understanding and stewardship of watersheds and related ocean, coastal, riverine, estuarine, and Great Lakes ecosystems. Last September, NOAA announced that eighty-four new and continuing projects—including those in Alabama, California, Florida, Pennsylvania, Texas, and Washington—would benefit from a total of over \$7 million in appropriated funding for the program.

NOAA's **Competitive Education Grants/Environmental Literacy Grants program**, which the agency touts as “the longest-standing and most comprehensive national grants program focused on environmental literacy,” aims to increase the understanding and use of environmental information to promote stewardship and increase informed decision making by U.S. educators, students, and the public. In its 2015 ELG funding announcement, NOAA challenged applicants to develop proposals that specifically addressed community resilience to extreme weather events and environmental changes, one of the agency's prime areas of focus. Since its inception, NOAA has made 80 ELG awards to 60 institutions across the country who, in turn, count nearly 30 million visits each year. Despite this broad, nationwide reach, the President's FY 2017 budget request once again proposes the termination of both the B-WET and the CEG/ELG programs, which received \$7.2 million and \$3 million, respectively, for FY 2016. **I urge the**

**Subcommittee to remain supportive of the programs by providing \$12 million in funding for B-WET and \$8 million in funding for CEG/ELG for FY 2017.**

#### National Science Foundation

The **Advancing Informal STEM Learning** program, offered by the Directorate for Education and Human Resources, typically provides resources to support design, adaptation, implementation, and research on innovative modes of learning in the informal environment, with important emphases on citizen science, making, and cyberlearning. There is a growing body of evidence that informal learning environments focused on STEM disciplines cultivates an interest among young people in STEM careers and promotes understanding of STEM content knowledge and the scientific process. Just last year, ASTC itself was awarded an AISL grant for a project that centers on the creation and validation of a theoretically grounded and empirically derived framework for professional growth and learning within the informal STEM learning (ISL) field. The framework will be useful to ISL practitioners at any stage of their education or career by laying out the necessary skills, knowledge, and dispositions to guide their professional growth. While the immediate beneficiaries of the project will be the ISL professionals themselves, the ultimate beneficiaries of the work will be the young people, teachers, and general public that engage with STEM experiences designed and implemented by a skilled and knowledgeable ISL professional workforce.

While the President's FY 2017 budget request *technically* includes level funding of \$62.5 million for AISL, I must point out that a significant portion of the total, \$7.5 million, would come from newly-proposed mandatory funding rather than via discretionary (CJS appropriations) sources. **As a result, I encourage the Subcommittee to provide \$62.5 million in FY 2017 funding for AISL.**

#### STEM Education Consolidation and Reorganization

With regard to the federal STEM education consolidation plan first released by the Administration for FY 2014 and amended in subsequent budget requests, I continue to have serious concerns about proposals to eliminate effective programs that support informal STEM learning. Integral federal investments, including the aforementioned NASA and NOAA offerings, are once again slated for elimination in FY 2017. I sincerely appreciate the Subcommittee's thoughtful consideration of the harmful effect of the proposed terminations, and ask you to remain steadfast in your support of these programs.

#### About ASTC and Science Centers

The Association of Science-Technology Centers is a global organization providing collective voice, professional support, and programming opportunities for science centers, museums, and related institutions, whose innovative approaches to science learning inspire people of all ages about the wonders and the meaning of science in their lives. Science centers are sites for informal learning, and are places to discover, explore, and test ideas about science, technology, engineering, mathematics, health, and the environment. They feature interactive exhibits, hands-on science experiences for children, professional development opportunities for teachers, and educational programs for adults. Again, and as Members of this Subcommittee know, it is imperative that we spark an interest in STEM fields at an early age, an elemental role of

community-based science centers and museums who often undertake the effort with modest, but vital, support from NASA, NOAA, NSF, and other federal agencies.

ASTC works with science centers and museums to address critical societal issues, locally and globally, where understanding of and engagement with science are essential. As liaisons between the science community and the public, science centers are ideally positioned to heighten awareness of critical issues like agriculture, energy, the environment, infectious diseases, and space; increase understanding of—and exposure to—important and exciting new technologies; and promote meaningful exchange and debate between scientists and local communities.

ASTC now counts 651 members, including 486 operating or developing science centers and museums in 42 countries. Collectively, our institutions garner 100 million visits worldwide each year. Here in the United States alone, your constituents pass through science center doors 69 million times to participate in intriguing educational science activities and explorations of scientific phenomena.

Science centers come in all shapes and sizes, from larger institutions in big metropolitan areas to smaller centers in somewhat less populated ones. ASTC represents institutions as diverse as the Academy of Natural Sciences of Drexel University (Philadelphia, PA); the Great Explorations Children's Museum (St. Petersburg, FL); the Health Museum (Houston, TX); the INFINITY Science Center, NASA's official visitor center for the Stennis Space Center (Pearlington, MS); the Mary G. Harden Center for Cultural Arts (Gadsden, AL); the Mississippi Inquisitorium (Hattiesburg); the Pacific Science Center (Seattle, WA); the Tech Museum of Innovation (San Jose, CA); and the Thinkery (Austin, TX).

Our centers reach a wide audience, a significant portion of which are school groups. Here in the U.S., 94% of our members offer school field trips, and we estimate that more than 13 million children attend science centers and museums as part of those groups each year. Field trips, however, are truly just the beginning of what science centers and museums contribute to our country's educational infrastructure, as: 92% offer classes and demonstrations; 90% offer school outreach programs; 76% offer workshops or institutes for teachers; 74% offer programs for home-schoolers; 67% offer programs that target adult audiences; 65% offer curriculum materials; 50% offer after-school programs; 34% offer youth employment programs; and 22% offer citizen science projects.

#### Conclusion

With this in mind, and while I am fully aware of the significant budget challenges that face this Subcommittee, the full Appropriations Committee, Congress, and the nation, I hope you will continue to recognize the important educational offerings science centers and museums make available to students, families, and teachers, along with the essential federal support they receive from NASA, NOAA, and NSF.

**Again, I respectfully request that you provide \$10 million for the Competitive Program for Science Museums, Planetariums, and NASA Visitor Centers Plus Other Opportunities at the National Aeronautics and Space Administration; \$12 million for the Bay-Watershed Education and Training Regional Programs and \$8 million for the Competitive Education**

**Grants/Environmental Literacy Grants program at the National Oceanic and Atmospheric Administration; and \$62.5 million for the Advancing Informal STEM Learning program at the National Science Foundation. In addition, please continue to closely examine any proposals that would seek to consolidate, reorganize, or eliminate federal STEM and environmental education programs in an effort to ensure that stakeholder input has been sought and that proven, successful programs are maintained.**

Thank you once again for your strong support for America's science centers and museums—and for the opportunity to present these views. My staff and I would be happy to respond to any questions or provide additional information as needed by the Subcommittee.

**Outside Witness Testimony from:  
Associated Universities, Incorporated**

**Submitted by:**

**Dr. Ethan J. Schreier  
President, Associated Universities, Incorporated (AUI)**

**Submitted to the Subcommittee on Commerce, Justice and Science,  
Committee on Appropriations,  
United States House of Representatives  
Washington, DC**

**Testimony on Fiscal Year 2017 Appropriations  
for the National Science Foundation**

**March 31, 2016**

This written testimony is submitted on behalf of Associated Universities, Incorporated (AUI) to ask you to continue your support of the National Science Foundation (NSF) in Fiscal Year (FY) 2017 by providing NSF with \$7.964 billion. In particular, we urge you to provide strong support for the NSF Division of Astronomical Sciences and the National Radio Astronomy Observatory (NRAO) and related Other Astronomical Facilities.

My name is Ethan Schreier, President of AUI, a non-profit corporation that operates the National Radio Astronomy Observatory under a Cooperative Agreement with the National Science Foundation. NRAO is a Federally Funded Research and Development Center (FFRDC) that enables forefront research into the Universe at radio wavelengths. Radio astronomy has opened new vistas into the Universe, uncovering the birthplaces of stars and planets, super-massive black holes, gravitational waves and the remnant heat of the Big Bang.

I would like to emphasize how much AUI appreciates your Committee's continued leadership on and recognition of the critical role of the NSF and its support for science and engineering in enabling a strong U.S. economy, workforce, and society.

Today, I submit this testimony to ask you to continue your support of NSF in FY 2017 and beyond.

NSF funds basic research that spurs innovation and discovery in all fields of science and engineering. As a part of this work, NSF provides unique federal support for ground-based astronomy that is answering fundamental questions about our Universe. These questions include how the Universe began, how cosmic structures form and evolve, whether habitable

worlds exist around other stars, and what organic materials exist in space as the building blocks of life.

**I request that you provide NSF with \$7.964 billion overall in FY 2017 as requested by the President. I ask that you allocate at least \$6.425 billion to Research and Related Accounts (RRA), and within RRA, we encourage you to provide \$262.2 million for the Division of Astronomical Sciences in accordance with the Administration's budget proposal for NSF.**

NSF provides critical funding to support unique astronomy facilities and the researchers in the United States that use them to answer these questions. In particular, NRAO currently operates four world-leading telescopes funded by NSF for use by the scientific community: the Jansky Very Large Array (VLA) in New Mexico, the most productive, ground-based telescope in history; the Robert C. Byrd Green Bank Telescope (GBT) in West Virginia, the world's largest, fully-steerable telescope; the Very Long Baseline Array (VLBA), the world's largest scientific instrument with 10 dishes spanning North America that enable the most precise angular measurements of any telescope; and the new international Atacama Large Millimeter/submillimeter Array (ALMA), the largest ground-based astronomy project ever conceived and built, for which AUI is the North American lead, overseeing NRAO's construction and operations for the North American science community. Each of these telescopes fills a unique and essential science role, and each is the best in the world in its category. NRAO's Headquarters, and the focus of its radio technology development, is in Virginia.

Certain physical phenomena are only observable by their radio signals. Just as visible light from space carries information about stars and the astronomical objects that are illuminated by them, radio waves are emitted by important celestial phenomena that are often invisible to our eyes, even with the best optical telescopes. For example, stars form from collapsing cold clouds of molecules and dust that are too cold and obscured to be observed by any other technique. The earliest stages of star formation, one of the most basic processes of astrophysics, are invisible even to the Hubble Space Telescope or the future James Webb Space Telescope and can only be studied using the techniques of radio astronomy. The ability of radio astronomy to determine the chemistry in distant stellar systems provides a unique tool to study exoplanets that may be hospitable to life. Radio astronomers are using accurate timing of pulsars – fast-spinning, highly dense, collapsed (*neutron*) stars – to search for the gravitational waves predicted by Einstein's Theory of General Relativity. This technique, which uses NRAO's Green Bank Telescope among other facilities, is a complement to the Laser Interferometer Gravitational Wave Observatory (LIGO) which just recently confirmed the existence of gravitational waves predicted a hundred years ago.

NRAO facilities provide transformational and unique scientific capabilities that enable the astronomy community to answer many fundamental questions about the Universe including those highlighted by the last National Academies' Decadal Survey, *New Worlds New Horizons*, studying galaxies as they form and grow since the earliest times of the Universe, directly imaging planets in formation around nearby stars, and directly detecting gravitational waves from the merging of massive black holes.

**We ask that you provide the FY 2017 request for NRAO operations to support ongoing activities at U.S. NRAO facilities. Support for these facilities will sustain groundbreaking research capabilities as well as our very active science, technology, engineering, and mathematics (STEM) education and public outreach programs. Furthermore, we hope you will support the ALMA project, completed this past year, at the President's proposed funding level of \$40.35 million for FY 2017.**

Starting in FY 2017, funding for the Very Long Baseline Array (VLBA) and the Green Bank Observatory (GBO) will be provided under the *Other Astronomical Facilities* line within the AST budget. The separation of VLBA and GBO from NRAO is legally required based on the terms of the recent NRAO recompetition and the new cooperative agreement that Associated Universities, Inc. (AUI) is establishing with NSF following that competition. **AUI will operate these facilities under a separate cooperative agreement extension in FY 2017 and FY 2018. The \$11.5 million provided for Other Astronomical Facilities will fund VLBA and GBO in FY 2017 and is essential to ensuring NSF's commitment to these facilities in the near-term.** AUI continues to work with NSF to secure the long-term sustainability of VLBA and GBO without compromising the forefront scientific research underway at those facilities.

**AUI also supports the important NSF initiative to fund midscale research infrastructure at \$18.7 million, an increase of \$5.7 million above the FY 2015 enacted level.** These funds would support scientific instrumentation that facilitates student training, bridging the gap between small laboratory-scale instrumentation and large multi-user facilities. This midscale program request would implement a priority identified by the National Academy's most recent decadal survey of astronomy and astrophysics.

We would like to conclude by thanking you again for your ongoing support of NSF that enables the research and education communities it supports, including thousands of astronomers, to undertake activities that contribute to the health, security, and economic strength of the U.S. NSF needs sustained annual funding to maintain our competitive edge in science and technology, and therefore we respectfully ask that you continue robust support of these critical programs in FY 2017. I appreciate the opportunity to provide testimony to the Committee on behalf of AUI, and I am happy to provide any additional information or assistance you may ask of us during the FY 2017 appropriations process.





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**Dr. Matt Mountain, President**  
**Dr. Heidi B. Hammel, Executive Vice President**  
Association of Universities for Research in Astronomy

Submitted to the United States House of Representatives  
Committee on Appropriations  
Subcommittee on Commerce, Justice, Science and Related Agencies

### **The President's Fiscal Year 2017 Budget Request for NASA and NSF**

On behalf of the Association of Universities for Research in Astronomy (AURA), we thank the House Appropriations Committee for its continued support of discovery science such as astronomy. We submit comments on the fiscal year 2017 request principally for the National Aeronautics and Space Administration (NASA) and the National Science Foundation (NSF), and ask that Committee members:

- Sustain appropriate funding for the Hubble Space Telescope in FY17 so it can fulfill its 2020 vision;
- Continue to support the James Webb Space Telescope (JWST) at the level requested by NASA, as this will ensure an October 2018 launch;
- Fund the WFIRST mission at a level that makes a 2024 launch possible, so NASA can maximize the scientific advantage of WFIRST's overlap with JWST and also reduce overall development cost;
- Restore the education programs in NASA's Science Mission Directorate to the FY15 level of \$42 million;
- Provide NASA with a Search for Life technology development line so the US industrial base can fully participate in developing the key technologies required in FY17;
- Continue to support programs in NSF's Astronomy Division of the Mathematical and Physical Sciences Directorate at the levels requested in the President's budget for NSF in FY17;
- Maintain the requested FY17 levels in the President's budget for NSF's Major Research Equipment and Facilities Construction (MREFC) account to keep construction on track for the Daniel K. Inouye Solar Telescope (DKIST) and the Large Synoptic Survey Telescope (LSST); and
- Support a study within the NSF to determine more robust approaches to finding the necessary funding for operations of these MREFC investments it undertakes.

## About AURA

AURA is a consortium of 40 US institutions and 4 international affiliates that operates world-class astronomical observatories. AURA's role is to establish, nurture, and promote public observatories and facilities that advance innovative astronomical research. These facilities include the Space Telescope Science Institute, the National Optical Astronomy Observatory, the National Solar Observatory, the Gemini Observatory, and the Large Synoptic Survey Telescope.

## Importance of Astronomy to the United States

We are often asked, "What puts *astronomy* in the must-have category as opposed to the nice-to-have category? Why are NASA and its space telescopes, and NSF and its ground-based facilities, of national importance in these fiscally constrained times?"

One answer focuses on astronomy's need for advanced technology. Another answer lies in the role of a space mission like JWST or telescopes like DKIST or LSST to encourage young people to take an active interest in science, technology, engineering and mathematics (STEM). But perhaps the most important answer is the inspirational appeal of astronomy. As a discovery-based science, astronomy creates breakthroughs and surprises in our understanding of the Universe.

For us in the United States, it is a matter of national pride that—as the world's most scientifically and technically advanced country—we work at the forefront of scientific exploration. Our quest for knowledge and understanding must be continually renewed if we are not to cede leadership to others. Within the broad context of astronomical research and the forefront facilities supported by the Federal Government, we highlight key aspects of programs within NASA, NSF, and DOE's Office of Science.

## National Aeronautics and Space Administration

**Hubble.** Hubble Space Telescope (HST) is NASA's most successful and longest-lasting science mission. HST's hundreds of thousands of images have helped scientists determine the age of the universe, the identity of quasars, and the existence of dark energy. Hubble launched in 1990 and is currently in an extended operations phase. The fourth servicing mission added new batteries, gyros, and instruments to extend its life into the 2020's. In FY17, the Space Telescope Science Institute (STScI) will select Cycle 24 science observations. NASA expects requested observational orbits to outnumber the available orbits by a factor of six to one, demonstrating that Hubble remains the preeminent astronomical observatory in the world.

The "2020 Vision" study confirmed that constant flat funding will enable Hubble to continue to deliver outstanding science and overlap with JWST, thereby maximizing the science return of both NASA Great Observatories. A flat funding profile maintains Hubble in its most scientifically productive phase ever. As a key observatory in *The Search for Life in the Universe*, Hubble continues to study water plumes on Europa to

inform NASA's Europa Clipper mission. The FY17 request reduces Hubble funding from the level needed to achieve the *2020 Vision*. This decrease would put *2020 Vision* in jeopardy: it removes the Project's flexibility to address operational anomalies that are likely to occur as the telescope ages.

**JWST.** The James Webb Space Telescope (JWST) continues to be NASA's top science priority. JWST (a large, deployable, space-based infrared astronomical observatory) is the scientific and technological successor to the Hubble Space Telescope, extending Hubble's discoveries by looking into the infrared portion of the electromagnetic spectrum. These wavelengths are where the highly red-shifted early universe must be observed, where astronomical objects like protostars and protoplanetary disks shine brightly, and where dust obscuration is greatly reduced. JWST will explore the mysterious epoch when the first luminous objects in the universe came into being after the Big Bang. JWST will also study the assembly of galaxies, the origins of stars and planetary systems, and the origins of the elements necessary for life.

FY17 is a critical year for JWST. Spacecraft integration and test activities, sunshield integration, and testing of the fully assembled telescope and science instruments at the Johnson Space Center will take place in parallel. Mating of the spacecraft and sunshield begins later in the year and will be followed at the fiscal year boundary by the integration of the spacecraft-sunshield component with the Optical Telescope Element and Integrated Science (OTIS) package (occurring in FY18). During FY17, the project will also hold the Mission Operations Review (MOR), a major milestone in the mission's launch preparedness. The President's FY17 budget request provides the full level of funding required to keep JWST on schedule for a 2018 launch.

**WFIRST.** The Wide-Field Infrared Survey Telescope (WFIRST) is the top-ranked large space mission from the most recent Astronomy Decadal Survey. A primary science driver for WFIRST is to answer key questions about dark energy. Dark energy is thought by physicists to permeate all of space; its presence is believed to accelerate the expansion of the universe. Study of dark energy is at the heart of major aspects of modern astronomy, hence the mission's top ranking in the recent decadal survey. In addition to characterizing dark energy, WFIRST will study planets beyond our solar system, perform high-resolution surveys of stars and galaxies, and conduct an active guest investigator program that will allow WFIRST to follow-up new discoveries made by the James Webb Space Telescope. Overlap with JWST is critical to leverage the science return from both missions. To achieve this, WFIRST should launch no later than 2024 (roughly five years after JWST commences operations) so that both observatories may simultaneously provide scientific investigations and data collection.

In 2012, the National Reconnaissance Office (NRO) donated major telescope optics to NASA. Using these assets significantly increases WFIRST's planned optical and infrared observing capacity, permitting a more powerful mission than originally envisioned, and reduces risk. The NRO optics solidify U.S. leadership in space-based wide-field surveys of the universe.

In fiscal years 2014 and 2015, the Congress appropriated funding for WFIRST pre-formulation and technical risk reduction studies to lower mission risk, minimize cost pressures going forward, and comply with Congressional direction that seeks to make sure that WFIRST's science builds upon knowledge already gained from HST and to be gained from the James Webb Space Telescope to guarantee the mission achieves "world class results". In fiscal year 2016 Congress appropriated funds to begin pre-formulation phase of the mission. WFIRST formally passed Key Decision Point A (KDP-A) in February 2016 and entered pre-formulation activities.

The FY17 PBR request, however, is insufficient to achieve the necessary preparatory work needed to enable a late 2024 launch without taking on significant technical risk. At that level, even a 2025 launch may be in jeopardy. By funding WFIRST at a level that makes a 2024 launch possible, NASA can maximize the scientific advantage of WFIRST, reduce mission risk and overall development cost, and fully exploit the nation's previous investment in JWST and the NRO optics.

**NASA Science Education.** The FY17 budget supports restructured science education efforts that are coordinated across all Science Mission Directorate (SMD) science disciplines. During FY16, SMD awarded new cooperative agreements to enable SMD scientists and engineers to engage with learners of all ages, consistent with the agency's overall efforts to support the goals of the Federal STEM Education 5-Year Strategic Plan. This restructured program should allow for more streamlined and effective implementation of SMD education efforts. If funded properly, it should also provide a return on the U.S. taxpayer's investment in NASA's scientific research, effectively and efficiently linking NASA science exploration of our home planet, the solar system, and the universe beyond with educational environments.

However, the amount requested in the President's FY17 budget request for SMD is less than required to continue a program as successful as SMD had previously. In the FY17 PBR, NASA is requesting \$25M, a cut of \$12M from the FY16 enacted level and a cut of \$17M from the FY15 level. The proposed cut would be a drastic step backward in sharing NASA's scientific discoveries with students who are to become the future science and engineering leaders of this country. The proposed cut would nullify any advantages NASA is hoping to achieve by consolidating education programs through its new competitive process. Furthermore, the current (FY16) NASA moratorium on formal education activities prohibits production of new classroom materials, delays communication of new science results to students and teachers, and jeopardizes longstanding partnerships with the education community. We urge restoration.

**NASA Search for Life Grand Challenge.** The *Search for Life in the Universe* grand challenge is a framework for unifying NASA's science and exploration programs. The *Search for Life* is a multi-pronged strategy that cuts across scientific disciplines (astrophysics, astrobiology, astrochemistry, planetary science), involves human and robotic exploration, and requires heavy-lift launch capabilities. To be cost effective, development of *Search for Life* capabilities in all of these areas needs to leverage existing knowledge, skills, technologies, and ground-support resources. In

astrophysics, the most important step forward in the *Search for Life* is to demonstrate that new technologies developed for the James Webb Space Telescope (JWST) can be scaled to larger (10-25 meter), segmented-aperture ultraviolet/optical telescopes needed to detect biomarkers in the faint signals of light from Earth-sized planets in the habitable zones around their host stars. The recent Astronomy Decadal Survey endorsed the need to strengthen technology development efforts for future strategic programs and ultraviolet/optical space capabilities.

Industry, in particular, needs to be engaged early in the design and development of technologies necessary to construct segmented-aperture telescopes larger than JWST. Areas in need of further maturation include high-precision wavefront sensing and control at optical and ultraviolet wavelengths, ultra-stable lightweight deployable optics, disturbance isolation, and advanced instrumentation to isolate and detect the biomarkers in the atmospheres of Earth-like exoplanets. Payload packaging studies and assessment of integration/test procedures for very large telescopes are also needed since a *Search for Life* telescope will pose new challenges to shipment, integration and testing, and launch segments of the mission.

### **National Science Foundation**

As the principal agency responsible for ground-based astronomy, NSF maintains core infrastructure that provides the general U. S. astronomical community with merit-based access to federally-funded observatories. Within the public astronomy infrastructure, it is crucial that NSF retain balance: between optical and radio astronomy; between operating facilities and new facilities; between operations and instrumentation.

We ask that the Committee continue to support programs in the Astronomy Division of NSF's Mathematical and Physical Sciences Directorate at the levels requested in the President's budget for NSF in FY17. We also ask that the requested levels in the President's budget for FY17 be maintained for construction of the Daniel K. Inouye Solar Telescope (DKIST) and Large Synoptic Survey Telescope (LSST) in NSF's Major Research Equipment and Facilities Construction (MREFC) account.

### **Interagency Astronomy Activities**

We ask the Committee to support the NSF in interagency cooperation. Such interagency efforts between NSF and, for example, the Department of Energy (DOE), have proven to be powerful: the DOE's Dark Energy Camera operating on the NSF-funded 4-meter Blanco telescope in Chile generates top-quality science. The DOE's Office of Science is providing the world's largest digital camera for NSF's LSST Project. NASA will provide a powerful new instrument for the WIYN Observatory in Arizona, which will be used to characterize planets discovered by the Kepler mission, laying the foundations for finding true Earth-like planets around other stars.

Again, we thank the Committee for its continued support of basic astronomical research within NASA, NSF and DoE's Office of Science.



**FY 2017 Testimony of the ASSOCIATION OF PUBLIC AND LAND-GRANT UNIVERSITIES' (APLU) Board on Oceans, Atmosphere, and Climate (BOAC) to the House Appropriations Subcommittee on Commerce, Justice, and Science and Related Agencies**

**Submitted by co-chairs: Dr. David M. Dooley, President, University of Rhode Island, [davedooley@uri.edu](mailto:davedooley@uri.edu), Phone: 401-874-4209 and Dr. Richard M. DeVoe, Executive Director, South Carolina Sea Grant Consortium, [rick.devoe@scseagrant.org](mailto:rick.devoe@scseagrant.org), Phone: 843-953-2078,**

On behalf of the Association of Public and Land-grant Universities' Board on Oceans, Atmosphere, and Climate (BOAC), we thank you for the opportunity to provide recommendations for the proposed FY 2017 budgets for the National Oceanic and Atmospheric Administration (NOAA), the National Aeronautics and Space Administration (NASA) and the National Science Foundation (NSF). BOAC represents hundreds of scientists and administrators at APLU's 235 member universities and systems. **We support a budget of \$80 million for NOAA's National Sea Grant Program, \$489 million for NOAA's Office of Oceans and Atmospheric Research, \$5.908 billion for NASA's Science Directorate and \$8 billion for NSF.**

A glance at the NOAA "U.S. 2015 Billion-Dollar Weather and Climate Disasters" map demonstrates that nearly every region of the country experienced some billion-dollar catastrophic event in 2015. These events include the western and Alaskan wildfires; the continuing western drought; tornadoes striking in the southern plains; severe flooding in Texas, Oklahoma, and South Carolina; severe storms across the south and north central regions; and the winter storm and cold wave that struck the northeast. Combined these 10 events resulted in 155 lives lost and over \$10 billion in losses.

The nation's ability to predict, plan for, absorb, and rebound from such changes is known as resiliency. How resilient the nation, or any community within it is, depends on the knowledge and understanding of the risks involved and proactive implementation of measures to reduce the impact and recovery time of a community. Public research universities, leveraging federal science funding and federal data with state and private funds, contribute greatly to this resilience through their research, education, and outreach missions. Below we highlight specific programs that support the nation's scientific enterprise in buttressing the nation's resilience to climate variations.

**NOAA**

Within NOAA, we would recommend \$80 million for the National Sea Grant College Program, an increase of \$6 million over FY16. As a Federal-state partnership, Sea Grant works to turn research into action, ensuring that coastal communities are economic engines and remain resilient in the face of natural hazards. In FY 2014, Sea Grant activities resulted in 17,500 jobs

created or retained, 6,500 businesses created or retained, and \$450 million dollars in economic benefit to the communities they serve.

Sea Grant is local; it provides NOAA with boots on the ground throughout the country's coastal areas. Sea Grant personnel hear directly from community members about their needs and work directly with communities to provide technical assistance. We provide below two examples of the type of work Sea Grant has done related to community resiliency.

*The Mississippi-Alabama Sea Grant Consortium (MASGC) Fortified Home Demonstration Projects*

Partnering with the insurance industry, community leaders and Habitat for Humanity, MASGC provided homeowners, community leaders, builders and others viewing opportunities for "code plus" building practices in action and allowed them to learn more about the advantages and cost benefits of "code plus" building. In addition, the project trained more than 30 college students how to build more resilient construction. Local media also covered the projects and shared with broad audiences. The future savings due to the mitigation activities at the three demonstration sites totals more than \$210,000 but had a total \$45,000 cost, which results in a 4.7:1 return on investment.

*Texas Sea Grant Reduces Operating Expenses for Texas Shrimpers through Technology Transfer*

From 2008 to 2014, experimental fuel-efficient trawl gear sponsored by Texas Sea Grant saved Texas shrimpers \$51 million in fuel costs by testing and conducting economic analyses of the benefits of improved net material and advanced trawl door design.

We encourage the Subcommittee to fund Sea Grant at \$80 million, allowing the Program to then be more heavily utilized in NOAA's community and resiliency efforts.

Underlying all of the programs above are the skilled scientists, educators, and community engagement specialists in academia, non-profits, industry and state, local, and federal government that actually perform the work. The continuity and durability of that workforce relies on strong educational programs that recruit, mentor, and develop the necessary human capacity. The Administration's budget calls for the elimination of several important STEM programs at NOAA that contribute to the development of a workforce with the skills and expertise needed in our 21<sup>st</sup> century economy.

NOAA's Fisheries Sea Grant Fellowship encourages students to pursue careers in population and ecosystem dynamics or marine resource economics, areas vital to NOAA's management of the nation's fisheries. The NOAA Teach at Sea Program permits K-12 teachers the opportunity to experience hands-on, real world research on NOAA's fisheries, oceanographic, or hydrographic survey cruises. This allows those teachers to enrich their curricula and enhance their approaches to teaching science. Finally, it is not enough in today's complex world to know only the technical aspects of one's science discipline, but also to hone professional skills needed to become tomorrow's leaders. The John A. Knauss Marine Policy Fellowship provides exactly that type of training.

BOAC strongly encourages the Subcommittee to protect the funding of all the NOAA STEM programs. BOAC strongly supports NOAA's research activities in the Office of Oceans and Atmospheric Research. This research provides a scientific base for climate, oceans and coastal research. We often focus on atmospheric research but almost 40% of the U.S. population lives in coastal shoreline counties and these counties contribute \$6.6 trillion to the U.S. economy. In view of the many challenges facing these communities, this research is of critical importance.

### **NSF**

BOAC supports \$8 billion for NSF. NSF provides 59% of geoscience basic research funding at academic institutions as well as supporting critical infrastructure such as the National Center for Atmospheric Research – Wyoming Supercomputing Center, the Academic Research Fleet, and the Ocean Observatories. Additionally, NSF is the home of traditionally strong STEM education programs.

BOAC supports \$1.399 billion, an increase of \$80 million over FY16, for NSF's geosciences directorate, including atmospheric and earth sciences and ocean sciences and coastal resilience. NSF's investments in the geosciences address important national challenges, spur new economic sectors, and lead to the development and implementation of advanced technologies that save lives, protect property, and support our economy. BOAC also supports the NSF's research effort called Prevention of and Resilience against Extreme Events (PREEVENTS), the purpose of which is to enhance national resilience to natural hazards. Like the Hazards' SEES (Science, Engineering, and Education for Sustainability) before it, PREEVENTS will improve quantitative models and qualitative research that should aid societal preparedness and resilience. In particular, PREEVENTS will promote disciplinary and multidisciplinary projects for significant near- or medium-term advances.

BOAC is also pleased to see NSF continue research into Innovations at the Nexus of Food, Energy, and Water Systems (INFEWS). This cross-directorate program aims to research the intersection of food, energy, and water systems to discover new knowledge and novel technologies to solve challenges facing all three areas. In its "Science Education and Outreach Roadmap for Natural Resources," APLU's BOAC and its Board on Natural Resources identified six major grand challenges facing the nation's natural resources, three of which are agriculture, energy, and water. There are many examples of where these three come into play with one another. For example, the drought in California affects not only California's enormous agricultural system but also the state's production of hydroelectricity. The resulting water-use trade-offs have required choices that, while currently manageable, could quickly become unmanageable in the future if not addressed through research and education. For example, the recently convened University of California, Berkeley INFEWS workshop "Designing Intelligent Food, Energy, & Water Systems (DIFEWS)" identified the stressor and solution mechanisms for California and elsewhere with respect to FEW Systems. The stressors are climate variability, persistent waste and pollution, and shifting demographic. The solutions mechanisms include information and data, incentives for behavior change, and appropriate technology. By their very nature, the solution mechanisms essentially call for work by interdisciplinary teams. As the country seeks to use science to solve its most pressing problems, programs like INFEWS and



PREEVENTS become essential programs for scientists and the decision-makers that rely on the information produced by them.

### **NASA**

Like NOAA & NSF, NASA is critical to community resilience, both for developing an understanding of the earth and how it functions as well as collection of the data scientists use to help aid decision-makers.

In 2007, the National Academies issued the decadal survey report, “*Earth and Science Applications from Space: National Imperatives for the Next Decade and Beyond*.” The report found that between 2000 and 2009 funding for Earth Sciences (ES) had fallen substantially. Past investments in NASA’s science mission have funded university research that has resulted in the development of new instruments and technologies and in valuable advances in weather forecasting, climate projections and understanding of Earth ecosystems.

NASA is instrumental in deploying satellites used by NOAA. Furthermore, without the tools developed at NASA, oceanic, atmospheric, hydrologic and earth-system scientists and the nation would have only a fragmentary picture of the interconnected functioning of the planet’s oceans, atmosphere and land. NASA plays a role in technology transfer from NOAA by testing new sensors. NASA is currently developing a sensor that will for the first time give scientists and resource planners a global picture of the world’s terrestrial water supplies. Currently many lakes and rivers are not monitored and there is no centralized location for water resource information. The NASA data archive is an irreplaceable collection of environmental information that researchers depend upon. NASA also flies the WB-57 high altitude research aircraft, which performs valuable atmospheric research missions including remote sensing for coastal resiliency and the study of hurricane formation and intensity change. Furthermore, through its support for young scientists and graduate students, the NASA science mission supports innovation in the education and future workforce pipeline.

BOAC supports the current decadal survey and its recommendations.

BOAC thanks you for the opportunity to provide our views to the Subcommittee. We look forward to working with you through the FY 17 appropriations process.

### ***About APLU and the Board on Oceans, Atmosphere and Climate***

APLU’s membership consists of 235 state universities, land-grant universities, state-university systems and related organizations. APLU institutions enroll more than 4.7 million undergraduate students and 1.2 million graduate students, award 1.2 million degrees, employ 1.4 million faculty and staff, and conduct \$42.7 billion in university-based research annually. The Board’s mission is to provide federal relations for issues involving university-based programs in marine, atmospheric, and climatological sciences. BOAC representatives are chosen by their president’s office to serve. They include some of the nation’s leading research and educational expertise in atmospheric, marine, and climate disciplines.



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March 31, 2016

The Honorable John Culberson  
 Chairman  
 Subcommittee on Commerce,  
 Justice, Science, and Related Agencies  
 Committee on Appropriations  
 U.S. House of Representatives  
 H-309 U.S. Capitol  
 Washington, D.C. 20515

The Honorable Mike Honda  
 Ranking Member  
 Subcommittee on Commerce, Justice,  
 Science and Related Agencies  
 Committee on Appropriations  
 U.S. House of Representatives  
 H-309 U.S. Capitol  
 Washington, D.C. 20515

Dear Mr. Chairman:

Thank you for offering the opportunity for members of the public to submit testimony for the record on the subcommittee's FY 2017 Commerce, Justice, Science, and Related Agencies (CJS) appropriations bill. My name is Leo Gomez, and I am the President & CEO of Brooks City-Base ("Brooks") located in southeast San Antonio, Texas. I am writing to tout Brooks' success in collaborating with the Department of Commerce's Economic Development Administration (EDA) to redevelop our campus. I believe EDA working in partnership with successfully redeveloping military bases closed by the Base Realignment and Closure (BRAC), such as Brooks, could develop a forward-looking economic recovery blueprint process that could be put to good use within the next five years.

Brooks is a bustling mixed-use development established on the grounds of the former Brooks Air Force Base, which closed following the 2005 BRAC round. When the Air Force left Brooks, our campus lost more than 2,800 jobs. In the years since, we have worked to attract international investors as well as federal, state, and local investments to develop a community where San Antonians can "Live, Work, Learn, and Play," with positive results echoing across the region. Now, more than 3,000 people work at 26 businesses located at Brooks, including Mission Solar Energy, Mission Trail Baptist Hospital, and an IT customer service call center, among others. Still more will live in one of the five residential complexes on campus, including one that opened last year. Students attend Texas A&M University San Antonio on campus or the under-construction University of the Incarnate Word School of Osteopathic Medicine arriving next year. Finally, all of San Antonio can play at parks scattered across the base, including a 43 acre centerpiece breaking ground this summer. These efforts have been supported in part by the EDA, which awarded Brooks a \$1.2 million Public Works Program grant to support demolition of 23 vacant and unusable buildings from our grounds.

Brooks has succeeded where many other BRAC-affected bases have struggled: vacant and decaying former bases dot our nation to this day, draining their local economies. Congress has not authorized a BRAC round for more than a decade for fear of creating more. The Pentagon nonetheless requested another BRAC round in its FY 2017 budget, and is currently preparing an excess infrastructure report that many believe will herald another BRAC round.

While we at Brooks have worked hard to ensure our redevelopment, we see no reason why other BRAC-affected bases should not be successful too. In at least some cases, they may just need the right tools. Through instructions in committee reports or through appropriations, the subcommittee has the power to jump-start a visionary post-BRAC redevelopment plan that will help ensure that defense communities are best equipped to convert discarded military bases into beds of innovation and technological advances in the 2020s and beyond. The EDA is an ideal leader for the initiative as one of several agencies charged with post-BRAC redevelopment. Further, the EDA has already led bleeding-edge technological, data-based, and public-private partnership-based approaches to complex economic problems. Expertise and experience within the EDA, perhaps in partnership with the Department of Defense's Office of Economic Adjustment, can be applied to collaborating with recovering bases like Brooks to craft a cutting-edge redevelopment blueprint that anticipates future economic shifts such as rapid urbanization, increasing reliance on the internet and connectivity, an expanding "sharing economy," and rising housing costs. Brooks and other recovering bases could offer their own experience, expertise, and ideas to an EDA blueprint that could be scaled up to apply to bases closed under future BRAC rounds.

Thank you for your consideration of my proposal. I am confident that a small investment now in a pioneering post-BRAC redevelopment blueprint will encourage positive results for future BRAC-affected bases, much as Brooks' redevelopment has improved, and will continue to boost San Antonians' quality of life. Thank you very much for your leadership of the CJS Subcommittee and your dedication to public service. Please do not hesitate to contact me at (210) 323-6555 with any questions about Brooks City Base or its experiences with the BRAC process.

Sincerely,



Leo Gomez  
President & CEO

**STATEMENT OF GABRIELLE MARTIN, NATIONAL PRESIDENT  
NATIONAL COUNCIL OF EEOC LOCALS, NO. 216, AFGE/AFL-CIO  
TO  
THE HOUSE APPROPRIATIONS SUBCOMMITTEE ON  
COMMERCE, JUSTICE, SCIENCE AND RELATED AGENCIES  
ON  
FY17 APPROPRIATION FOR EEOC,  
THE CIVIL RIGHTS AGENCY NEEDS A BUDGET BOOST DIRECTED AT  
FRONTLINE RESOURCES AND OVERSIGHT OF EFFICIENCIES SUCH AS FULL  
SERVICE INTAKE AND FLATTENING 1:5 SUPERVISOR TO EMPLOYEE RATIO  
TO REDUCE 76,408 CASE BACKLOG AND LENGTHY PROCESSING TIMES  
March 31, 2016**

Chairman Culberson, Ranking Member Honda, and members of the Subcommittee, this testimony is submitted on behalf of the National Council of EEOC Locals, No. 216, AFGE/AFL-CIO. The Council is the exclusive representative of the bargaining unit employees at the Equal Employment Opportunity Commission (EEOC), including investigators, attorneys, administrative judges, mediators, paralegals, and support staff in 53 offices nationwide. Discrimination continues to cost jobs. Workers and applicants filed 89,385 charges of discrimination with EEOC last year. EEOC's budget has not kept up to support the workload. EEOC's current budget is \$2.5M lower than it was six years ago. EEOC's 76,408 backlog is on the rise again. The public suffers when trapped in the backlog or waiting approximately 45-90 minutes for help from EEOC's short-staffed in-house call center. EEOC should use its limited hiring authority wisely for frontline positions to serve the public and reduce the backlog. Instead, EEOC maintains a top-heavy 1:5 supervisor to employee ratio. EEOC should also implement efficiencies, such as the Dedicated Intake Plan.

The Council seeks this Subcommittee's continued support to ensure that EEOC can effectively enforce workplace discrimination laws that help Americans get and keep jobs, by including bill and report language for FY16 which: (1) supports the FY17 budget request for EEOC for \$376,646,000; (2) directs EEOC to hire frontline staff to reduce the backlog; (3) requires EEOC to implement efficiencies, i.e., pilot the Cost Efficient Full Service Intake Plan, reduce supervisor to employee ratio to 1:10, cut unnecessary contracts and management travel, and stop costly turnover; (4) preserves Federal workers' rights to discovery and full and fair hearings, which include subpoena authority; (5) requires EEOC to budget, fund and compensate employees in the current claims process of a Federal arbitrator's 2009 final ruling that EEOC willfully violated overtime laws; and (6) maintains oversight of any restructuring.

**Introduction:**

The EEOC's jobs focused mission is to enforce this nation's laws which protect against discrimination in employment based on race, color, religion, sex, national origin, age, disability, and genetics. Last year 89,385 discrimination charges were filed by applicants and workers, who came to the EEOC for help getting a fair shot in the workplace. Unfortunately, short-staffing, 2012 sequestration furloughs and the 2013 shutdown mean that EEOC's backlog of 76,408 cases is again on the rise. Delays caused by the backlog are bad for workers and employers. Also, constituent complaints to Congressional offices will increase. We request that this Subcommittee support the FY17 budget request for EEOC for \$376.6M and provide report language that directs EEOC to hire frontline staff and implement recommended efficiencies.

**Support the FY16 Budget Request for \$376,646,000:**

Support for EEOC's budget request of \$376.6M is warranted, because recent cuts have left EEOC short-staffed and unable to keep up with its heavy workload. EEOC's FY10 budget was \$367M. By FY12 it was \$360M. Sequestration slashed FY13's budget to \$344M. EEOC received \$364M in FY14, then \$364.5M in FY15 and FY16. While sequestration is relaxed for now, EEOC's FY16 budget is \$2.5M below FY10. Yet, the costs of travel, postage, office supplies, etc., have increased.

Since its inception, EEOC has always been small and underfunded. Yet in FY13, to absorb the drastic sequestration cut, EEOC forced five furlough days on its employees. On the heels of FY13 furloughs came the sixteen day government shutdown. According to the Office of Management and Budget, the EEOC lost 23,000 worker days to the shutdown. During that time, EEOC received nearly 3,150 charges of employment discrimination that contributed to the already high backlog and unreasonable processing delays.

Current frontline staff levels are insufficient to address the workloads. In FY15 EEOC took 89,385 new charges of discrimination. EEOC ended FY15 with only 2,190 employees nationwide, well under its staff ceiling of 2,347; assigned investigators fell to 617 nationwide, which is 300 fewer than in FY00. EEOC's FY17 budget projects a net loss of 32 investigators in FY16. Support-staff are chronically in short supply. Consequently, EEOC's FY17 budget request states, "Fiscal year 2016 resolutions are projected to decline due to the minimal amount of front-line hiring feasible under the fiscal year 2016 budget."

The workload to staff imbalance means more victims are trapped in EEOC's backlog. The titanic backlog has risen from 70,781 cases in FY13 to an abominable 76,408 in FY15 (up almost 8%). EEOC's last reported average case processing delay is a dismal 9 months.

Complex and time consuming filings like disability and retaliation continue to increase. EEOC has renewed its emphasis on systemic cases in order to focus its limited resources on cases with the greatest impact. However, these large labor intensive cases need resources.

Other frontline activities impacted by the relentless attrition include EEOC's mediation program. While EEOC receives high marks from participants, EEOC's FY17 Budget projects a net loss of six mediators in FY16.

EEOC's in-house call center shrunk from 65 intake information representatives (IIR) to approximately 29. The IIR shortage means long delays (45 to 90 minutes) for callers. Hold times spike between 11:00 a.m. to 2:00 p.m., impeding workers needing to call on lunch breaks.

EEOC receives over 18,000 Freedom of Information Act requests (FOIA) annually, which are processed by less than 39 full time staff. The FY15 Chief FOIA Office report acknowledges that the backlog was not reduced, with a slight increase attributable to the loss of staff.

The chart included with this testimony illustrates EEOC's troubling customer service trends. EEOC's backlog crisis was at its worst when it jumped 35% in FY07 and again in FY08. The runaway backlog was caused by increased charge filings, a 25% reduction in staffing levels due to a multiyear hiring freeze, and several years of flat-funding. Undisputedly, EEOC did not have

the resources to serve the public by 2008. In this context, President Bush requested a budget and staffing increase for EEOC for FY09, as did President Obama the next year. Congress enacted both requests. With this support, EEOC modestly reduced the backlog 10% in FY11 and FY12.

Now, with recent budget cuts and level funding, EEOC has reversed course and the backlog is rising. Therefore, the Council respectfully requests that this Subcommittee support the FY17 budget for \$376.6M for EEOC to tackle its backlog and allow for hiring of frontline positions.

**EEOC Should Implement Efficiencies To Save Money and Improve Service to the Public:**

For several years, the Council has shared with this Subcommittee common sense solutions that EEOC should implement to create tangible improvements to services. Instead the EEOC's FY17 Budget details the roll outs of "efficiencies" (online appointment system, electronic charge status tracking, and online pre-charge filing), which are not addressing the real problem, i.e., inadequate numbers of frontline staff to process work once it is in EEOC's system. Moreover, a lack of resources undermines a new digital system, by taking investigator time away from the public to scan documents. The public can now track case delays and will increase complaints to the call center staff, who will forward them to the already overwhelmed investigative staff. Therefore, the Council respectfully requests report language to initiate these real efficiencies:

**(1) Direct EEOC To Finally Pilot The Cost-Saving Intake Plan To Help the Public:**

For seven years, EEOC has not acted on a Cost Efficient Full Service Intake Plan. This Subcommittee's FY16 Report Language made clear that EEOC must "continue to prioritize inventory reduction and to examine new ways to address the backlog and increase productivity." The backlog in two years grew from 70,781 cases in FY13 to 76,408 cases in FY15. The Union's intake plan addresses the backlog.

The plan integrates the Intake Information Representatives (IIR) and staffs each office with a compliment of paraprofessional positions grades (GS-5 through GS-9). Instead of reading scripts and merely forwarding calls to intake, these paraprofessionals, classified as Investigator Support Assistants (ISAs), will be incorporated into dedicated intake units where they will advance the intake process from pre-charge counseling through charge filing, i.e., they will perform the full range of ISA duties. The plan produces costs savings by not pushing the intake work to GS-11-12 investigators, who instead can investigate the large number of complex ADA, retaliation and systemic cases and reduce the backlog.

It is more critical than ever to transition away from the flawed in-house call center model. Staffing has plummeted from 64 to 29 IIRs and hold times are often 45-90 minutes. Also, the number of calls answered has dropped from 25,000 per month in FY12 to 19,000 per month in FY13 to just 9,000 in FY15. Therefore, the Council respectfully requests that report language direct EEOC to finally implement a pilot of the Full Service Intake Plan.

**(2) Make EEOC Flatten its Current 1:5 Supervisor to Employee Ratio:**

EEOC should flatten its current inefficient 1:5 supervisor to employee ratio. The EEOC's Republican leadership supported a 1:10 ratio in 2006, but this reasonable goal was never realized. Fewer layers of processing means faster help for the public. Hiring frontline staff instead of high salaried managers is also more cost efficient. Yet, with this year's level funding, EEOC again plans to use its limited hiring to fill supervisor and manager vacancies. Instead, EEOC should be directed to use any hiring to rebalance the top heavy agency.

According to EEOC's FY17 budget justification, even if EEOC receives the requested funding, it still projects a rock bottom staffing of investigators, i.e., only 616 assigned investigators. The agency should focus hiring on its primary resource, yet the FY17 budget justification demonstrates this will not be the case. Therefore, the Council requests report language directing EEOC to prioritize frontline staff hiring.

**(3) Require EEOC to Reduce Costly Turnover By Improving Morale with Efficiencies:**

EEOC continues to score well below the government average in many significant areas in the 2015 Federal Employee Viewpoint survey. Efficiencies will limit costly turnover and improve employee morale. EEOC should correct negative supervisor conduct and avoid reasonable accommodation delays, both of which contribute to the agency ranking third on its own list of agencies most accused of discrimination. EEOC should reinstate the staff development program for FY16 and FY17, to show a commitment to career advancement.

**(4) Work Smarter by Eliminating Management Travel and Unnecessary Contracts:**

The EEOC should eliminate contracts for work that can be performed in-house. EEOC habitually pays contractors to evaluate its work practices. These reviews should be performed by the Office of Inspector General (OIG), but OIG farms out these projects. EEOC should not hire contract mediators, when an in-house mediator is within 100 miles. The agency should also eliminate management travel that can be accomplished by video-teleconference.

**Bill Language Should Retain Oversight of any EEOC Restructuring:**

The Council urges the Subcommittee to retain bill language regarding oversight of restructuring. The last restructuring added bureaucratic layers, but no frontline staff. Additionally, the restructuring drew concerns from House and Senate CJS Subcommittees. Congress should ensure a transparent process for stakeholders to provide feedback to any draft reorganization plan(s).

**Federal Employees Must Have Rights to Discovery and Full and Fair Hearings before AJs:**

In February 2015, EEOC issued an advance notice of proposed rulemaking regarding the Federal sector EEO complaint process. The questions signal that EEOC will consider an ill-conceived plan to threaten the rights of Federal employees to seek redress for claims of discrimination: "Should the hearing stage be retained?" and "If the hearing stage is retained as a matter of right, should the administrative hearing take place after an investigation." The hearing stage must be maintained as an essential right. Moreover, efforts to move the hearing to a different stage in the process would serve to foreclose discovery, which is critical as the investigation conducted initially by the agency accused of the discrimination may be biased.

The 2015 performance accountability report states that "EEOC implemented a Federal Case Management System (CMS) designed to bring consistence and greater efficiencies to the federal sector complaints through the early categorization of incoming hearings and appeals." Pilots have shown that the triage scheme threatens the judicial independence of Administrative Judges (AJs) to the detriment of Federal employees, who may lose their rights to discovery or a hearing, in favor of numbers. For full and fair hearings, administrative judges need subpoena authority. Any changes to the Federal EEO process must be transparent and proceed through the regulatory process.

Additionally, EEOC revised regulations to allow Federal agency complaint processing pilots. EEOC should only approve pilots that call for complete, timely, and impartial investigations. Mandating EEOC reports on approved Federal agency complaint processing pilots will provide valuable oversight to protect the rights of Federal employees.

**Require EEOC to Compensate Its Workers for Willful Overtime Violations:**

A Federal Arbitrator issued a now final ruling in 2009, that EEOC willfully violated overtime laws. EEOC continues to add to litigation expenses by frivolously extending the claims process. This sad chapter in the "model employer's" history is coming to an end. EEOC must ensure that the FY16 operating plan and the FY17 budget funds employee overtime payments for the current claims process phase of the arbitration. EEOC must create efficiencies to avoid future overtime violations.

**Conclusion:**

The Council thanks the Subcommittee for the opportunity to provide our views on EEOC's challenges from the perspective of its frontline employees. The Council requests this Subcommittee's continued support to ensure that EEOC can effectively enforce workplace discrimination laws that help Americans get and keep jobs, by including bill and report language for FY17 which: (1) supports the FY17 budget request for EEOC for \$376,646,000; (2) directs EEOC to hire frontline staff to reduce the backlog; (3) requires EEOC to implement efficiencies, i.e., pilot the Cost Efficient Full Service Intake Plan, reduce supervisor to employee ratio to 1:10, cut unnecessary contracts and management travel, and stop costly turnover; (4) preserves Federal workers' rights to discovery and full and fair hearings, which include subpoena authority; (5) requires EEOC to budget to compensate employees in the current claims process of a final Federal arbitrator's 2009 ruling that EEOC willfully violated overtime laws; and (6) maintains oversight of any restructuring.

**CHART: EEOC'S TROUBLING CUSTOMER SERVICE TRENDS**

	FY01	FY02	FY03	FY04	FY05	FY06	FY07	FY08	FY09	FY10	FY11	FY12	FY13	FY14	FY15
FTEs	2,924	2,787	2,617	2,462	2,349	2,250	2,137	2,174	2,192	2,385	2,454	2,346	2,147	2,098	2,190
Backlog	32,481	29,041	29,368	29,966	33,562	39,946	54,970	73,941	85,768	86,338	78,136	70,312	70,781	75,935	76,408
% Backlog increase	N/A	-10	+1	+2	+12	+19	+38	+34.5	+16	+7	-10	-10	+1	+7.28	>+1
Charge Receipts	80,840	84,442	81,293	79,432	75,428	75,768	82,792	95,402	93,277	99,922	99,947	99,412	93,727	88,778	89,385
Resolutions	90,106	95,222	87,755	85,259	77,352	74,308	72,442	81,081	85,980	104,999	112,499	111,139	97,252	87,442	92,641
Avg. Charge Processing Days	182	171	160	165	171	193	199	229	294	313	293	288	267	EEOC no longer reports	EEOC no longer reports





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Testimony of  
**May Berenbaum, PhD, President**  
**Entomological Society of America**  
On  
**Fiscal Year 2017 Appropriations for the National Science Foundation**  
Submitted to the  
**Appropriations Subcommittee on Commerce, Justice, Science, and Related Agencies**  
**United States House of Representatives**

March 25, 2016

The Entomological Society of America (ESA) respectfully submits this statement for the official record in support of funding for the National Science Foundation (NSF). **ESA requests a robust fiscal year (FY) 2017 appropriation of \$8 billion for NSF, including strong support for the Directorate for Biological Sciences (BIO).**

Research in basic biological sciences, including entomology, provides the fundamental discoveries that advance knowledge and facilitate the development of new technologies and strategies for addressing societal challenges related to economic growth, national security, and human health. Basic research on the biology of insects has provided fundamental insights not only within entomology but also across all areas of biology, spanning cell and molecular biology, genomics, physiology, ecology, behavior, and evolution. In turn, these insights have been applied toward meeting challenges in a wide range of fields, including conservation biology, habitat management, livestock production, and pest control. Moreover, insects have long played an essential role as model organisms for understanding basic biological processes across all organisms, including humans. Insects are often ideal laboratory experimental subjects because they are generally small in size and inexpensive to obtain, they complete development rapidly, and they can be maintained without the special facilities required for vertebrate animals. The familiar “fruit fly,” *Drosophila melanogaster*, for example, has been the subject of NSF-funded research that has profoundly transformed the understanding of human health in countless ways; in 1995, NSF-funded studies elucidating the genetic control of embryo development in this insect was recognized with the Nobel Prize in Medicine or Physiology.

NSF is the only federal agency that supports basic research across all scientific and engineering disciplines, outside of the medical sciences. Each year, the foundation supports an estimated 300,000 researchers, scientific trainees, teachers, and students, primarily through competitive grants to approximately 2,000 colleges, universities, and other institutions in all 50 states. NSF also plays a critical role in training the next generation of scientists and engineers, ensuring that the United States will remain globally competitive in the future. For example, the NSF Graduate Research Fellowship Program selects and supports science and engineering graduate students demonstrating exceptional potential to succeed in science, technology, engineering, and mathematics (STEM) careers.

Through activities within its BIO Directorate, NSF advances the frontiers of knowledge about complex biological systems at multiple scales, from molecules and cells to organisms and ecosystems. In addition, the directorate contributes to the support of essential research resources, including biological collections and field stations. NSF BIO is also the nation's primary funder of fundamental research on biodiversity, ecology, and environmental biology.

One project funded by NSF that illustrates the broad reach of basic biology research is focused on how diverse insects, including flies and butterflies, use their specialized mouthparts for imbibing fluids.<sup>1</sup> This study examines common and divergent elements allowing these insects to ingest fluids, including wettability properties, fluid uptake mechanisms, and the influence of the form of the fluid, as a pool or a film, on dynamics of fluid acquisition. Results of this project can elucidate how insects select and utilize diets ranging from floral nectar to vertebrate blood and how fluid use leads to species diversification in groups with tremendous impact on human life, including pollinators and blood-feeding disease vectors. At the same time, this work is yielding bio-inspired principles of fluid uptake and transport that can be applied to developing flexible microfluidic probes and other new engineering devices for use in diagnostic medicine and other purposes.

Another group of investigators is funded by NSF to study the reproductive biology of the red imported fire ant, an invasive species that infests over a dozen southern states and costs this region more than five billion dollars annually in health costs, crop and livestock losses, and control efforts.<sup>2</sup> These investigators are examining how the colonies of this species, particularly those with multiple queens, grow so rapidly, focusing on how neuronal signaling molecules respond to the nutritional status of the queen and regulate the network of genes involved in ovary development and egg maturation. Information obtained through these studies is both expanding basic knowledge of task allocation in social insects, which collectively comprise approximately 75% of all insect biomass on the planet, and provide new insights into stemming invasions and restoring the health of land lost to fire ant infestation.

Yet another example of how NSF's support for basic research on insects is important for the nation's economic, social, and environmental well-being is the collaborative project between two universities on the classification and evolutionary history of a group of beetles known as the pygmy borers.<sup>3</sup> These tiny beetles comprise one of the largest groups of so-called bark beetles, which collectively infest and kill millions of acres of trees every year by boring into bark or other tree parts; some species compound the damage they inflict by infecting their tree hosts with pathogenic fungi. One pygmy borer species, called the coffee berry borer, damages the coffee

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<sup>1</sup> Adler, P. et al. Mechanisms of Fluid Feeding in Insects, from Nanoscale to Organism, Award Abstract #1354956.

<sup>2</sup> Pietrantonio, P. and C. Tamborindeguy, Neuropeptide Receptors and Identification of Genes in Signaling Networks Involved in Reproduction and Nutrition in the Red Imported Fire Ants. Award Abstract #1257837.

<sup>3</sup> Collaborative Research: Cognato, A.; Hulcr, J. The Pygmy Borers (Col., Scolytinae: Cryphalini): revision of genera, evolution of the genome, and modernization of insect systematics. Award Abstract #1256663, Award Abstract #1256968.

berries that produce coffee “beans”; this tiny insect, less than 2 mm (8/100ths of an inch) long, is capable of destroying an entire coffee harvest in some regions. These investigators are using cutting edge methods, including next-generation genome sequencing, along with automated matrix-based identification techniques to reconstruct the evolutionary history of and relationships among the pygmy borers, determine whether widespread species in the group are actually many different cryptic species, and to understand the effects of bacterial parasites on the genomes of species in the group. A product of this research will be new, powerful but cost-effective ways to differentiate among species, which can be exceedingly difficult to identify, that will enable quarantine officers to identify and prevent this species from expanding its range into new areas.

**Given NSF’s critical role in supporting fundamental research and education across science and engineering disciplines, ESA supports an overall FY 2017 NSF budget of \$8 billion. ESA requests robust support for the NSF BIO Directorate, which funds important research studies and biological collections, enabling discoveries in the entomological sciences to contribute to understanding environmental and evolutionary biology, physiological and developmental systems, and molecular and cellular mechanisms.**

ESA, headquartered in Annapolis, Maryland, is the largest organization in the world serving the professional and scientific needs of entomologists and individuals in related disciplines. Founded in 1889, ESA has nearly 7,000 members affiliated with educational institutions, health agencies, private industry, and government. Members are researchers, teachers, extension service personnel, administrators, marketing representatives, research technicians, consultants, students, pest management professionals, and hobbyists.

Thank you for the opportunity to offer the Entomological Society of America’s support for NSF. For more information about the Entomological Society of America, please see <http://www.entsoc.org/>.



**RESTORE  
AMERICA'S  
ESTUARIES**

**OFFICIAL TESTIMONY OF  
JEFFREY R. BENOIT  
PRESIDENT AND CEO, RESTORE AMERICA'S ESTUARIES**

**PREPARED FOR**

**COMMITTEE ON APPROPRIATIONS  
SUBCOMMITTEE ON COMMERCE, JUSTICE, SCIENCE  
AND RELATED AGENCIES  
UNITED STATES HOUSE OF REPRESENTATIVES**

**ON**

**FISCAL YEAR 2017 APPROPRIATIONS FOR THE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION**

**March 31, 2016**

Restore America's Estuaries is a nonpartisan, nonprofit organization that has been working since 1995 to restore our nation's greatest estuaries. Our mission is to restore and protect estuaries as essential resources for our nation. Restore America's Estuaries is an alliance of community-based coastal conservation organizations across the nation that protect and restore coastal and estuarine habitat. Our member organizations include: American Littoral Society, Chesapeake Bay Foundation, Coalition to Restore Coastal Louisiana, Save the Sound—a program of the Connecticut Fund for the Environment, Galveston Bay Foundation, North Carolina Coastal Federation, EarthCorps, Save The Bay—San Francisco, Save the Bay—Narragansett Bay, and Tampa Bay Watch. Collectively, we represent over 250,000 members nationwide.

As you develop the Fiscal Year 2017 Commerce, Justice, Science and Related Agencies appropriations bill, Restore America's Estuaries encourages you to provide the funding levels below within the Department of Commerce, National Oceanic and Atmospheric Administration (NOAA) for core programs which significantly support coastal community and ecosystem resilience and local economies:

- **\$68.4 million for Habitat Conservation and Restoration**  
*(NOAA: ORF: NMFS: Habitat Conservation and Restoration)*
- **\$10 million for Regional Coastal Resilience Grants**  
*(NOAA: ORF: NOS: Ocean and Coastal Management and Services: Coastal Management Grants: Regional Coastal Resilience Grants)*
- **\$23.9 million for National Estuarine Research Reserve System Operations**  
*(NOAA: ORF: NOS: Ocean and Coastal Management and Services: National Estuarine Research Reserve System)*

- **\$1.7 million for National Estuarine Research Reserve System Construction**  
(NOAA: PAC: NOS: NERRS Construction)

These non-regulatory investments strengthen and revitalize America's coastal communities by protecting and restoring habitat, improving local water quality, and enhancing resilience. Healthy coastlines protect communities from flood damage and extreme weather, improve commercial fisheries, safeguard vital infrastructure, and support tourism and recreational opportunities.

## **NOAA HABITAT CONSERVATION AND RESTORATION**

(NOAA: ORF: NMFS: *Habitat Conservation and Restoration*)

NOAA's Office of Habitat Conservation (OHC) protects, restores, and promotes stewardship of coastal and marine habitat to support our nation's fisheries and improves the resilience of coastal communities through financial support and the provision of restoration expertise and services. Funding for the Office of Habitat Conservation through the Habitat Conservation and Restoration PPA supports the **Community-based Restoration Program, Coastal Ecosystem Resiliency Grants, the Estuary Restoration Program**, and staff capacity to efficiently execute and facilitate habitat restoration nationwide.

NOAA's **Community-based Restoration Program (CBRP)**, funds on-the-ground projects to restore the nation's coastal, marine, and migratory fish habitat while creating jobs and benefiting local economies. Habitat restoration is critical to sustaining and rebuilding fish populations needed to support sportfishing opportunities and the commercial fishing industry in the coming years. Healthier habitats resulting from restoration increase community resilience by buffering against storms, protecting vital infrastructure, and providing new recreational opportunities.

The Community-based Restoration Program provides scientific expertise, funding, and technical support to national, regional, and local conservation partners to restore coastal and marine habitat. This non-regulatory tool has helped build collaborations with more than 2,500 organizations, from industry to nonprofits to local governments, and funded more than 2,000 projects that have restored over 81,000 coastal acres. The program has engaged more than 258,000 project volunteers and generated more than \$150 million in non-federal match and in-kind contributions from project partners.

Our nation's coastal communities face ever-increasing pressures from extreme weather events, changing environmental conditions, and sea level rise. These hazards not only threaten the 39% of the nation's population that live in coastal counties, but also the economy, to which coastal counties provide nearly half of the nation's GDP.

NOAA's **Coastal Ecosystem Resiliency Grants** aim to reduce these risks and associated costs by funding proactive, community-based projects that improve ecosystem and community resilience to extreme weather, sea level rise, flooding, and other coastal hazards. The Program focuses on building partnerships that leverage non-federal funds to carry out projects that restore degraded or altered habitats to functioning, resilient ecosystems that not only provide direct benefits to communities, but also provide healthy habitat for commercial and listed fish species. The inaugural funding solicitation for this program drew in \$46 million in funding requests for

shovel-ready resilience projects, more than nine times the available funding, demonstrating a significant need for these grants.

The **Estuary Restoration Program** was transferred from the National Ocean Service to the National Marine Fisheries Service under the Habitat Conservation and Restoration PPA without additional funding in Fiscal Year 2014 omnibus appropriations. The Estuary Restoration Act established a comprehensive interagency organization, the Estuary Habitat Restoration Council, comprised of five key federal restoration agencies to lead a coordinated approach to estuary habitat restoration. Under the Act, NOAA is responsible for maintaining the National Estuaries Restoration Inventory (NERI). Modest funding is necessary for maintaining and updating NERI and to ensure cross-agency collaboration continues. Restore America's Estuaries urges your continued support of the Estuary Restoration Council and NOAA's Estuary Restoration Program.

**We strongly urge the Committee to provide \$68.4 million for Habitat Conservation and Restoration, including no less than \$10 million for Coastal Ecosystem Resiliency Grants and \$21.1 million for the Community-based Restoration Program.** Funding at this level supports the President's FY17 budget request, but we request that the Subcommittee retain funding for Coastal Ecosystem Resiliency Grants within NMFS. We greatly appreciate the Subcommittee's past strong support for habitat restoration and, in particular, the Coastal Ecosystem Resiliency Grants program.

#### **NOAA REGIONAL COASTAL RESILIENCE GRANTS**

*(NOAA: ORF: NOS: Ocean and Coastal Management and Services: Coastal Management Grants: Regional Coastal Resilience Grants)*

The National Ocean Service **Regional Coastal Resilience Grants** help interested communities improve resilience to extreme weather events, climate hazards, and changing ocean conditions by providing funding for collaborative partnerships that develop and use science-based solutions to address coastal hazards. These diverse efforts, including risk assessment, development of strategic resilience plans, and implementation of comprehensive adaptation strategies will help ensure that coastal communities are prepared for and more easily recover from coastal hazards. In FY16, NOAA received more than 130 proposals from coastal communities requesting more than \$151 million for coastal resilience projects, demonstrating an unmet need for resilience planning and tools and project implementation nationwide.

**Restore America's Estuaries urges the Committee to provide no less than \$10 million for the Regional Coastal Resilience Grant Program.** We ask the Committee to ensure that NOS coordinates closely with the NMFS Office of Habitat Conservation to increase efficiency and leverage capacity to help meet shared goals.

#### **NOAA NATIONAL ESTUARINE RESEARCH RESERVE SYSTEM**

*(NOAA: ORF: NOS: Ocean and Coastal Management and Services: National Estuarine Research Reserve System) / (NOAA: PAC: NOS: NERRS Construction)*

The **National Estuarine Research Reserve System (NERRS)** is comprised of 28 protected reserves that support long-term research, education, training, and monitoring. Through an

effective partnership between NOAA and coastal states, NERRS plays a critical role in sustaining resilient coasts and coastal communities.

The states have been entrusted to operate and manage NOAA's program in 22 states and Puerto Rico, where over 1.3 million acres of land and water are protected in perpetuity. Through scientific research and science-based management, NERRS provides numerous benefits to communities that result in improved water quality, increased upland flood and erosion control, and improved habitat quality that support local fisheries and provide storm protection to coastal communities.

NERRS assists our coastal communities, industries and resource managers to enhance coastal resiliency in a changing environment. As severe weather events become more common, federal, state, and local officials are recognizing that estuaries have the capacity to provide green resilience infrastructure. Through NERRS, NOAA can tailor science and management practices to enable local planners to use estuarine habitat as a tool for resilience and adaptation.

**Restore America's Estuaries respectfully requests \$23.9 million for NERRS operations and \$1.7 million for NERRS construction in Fiscal Year 2017.** At this funding level, NERRS will be able to carry out much-needed infrastructure maintenance and upgrades that will allow NERRS to continue to deliver comprehensive environmental intelligence data and services to support coastal communities.

## CONCLUSION

Restore America's Estuaries greatly appreciates the support this Subcommittee has provided in the past for these important programs. These programs help to accomplish on-the-ground restoration work which results in major benefits:

- **Jobs** – Coastal habitat restoration projects create between 17-33 jobs per \$1 million invested, more than twice as many jobs as the oil and gas sector and road construction industries combined.
- **More fish** – Traditional fisheries management tools alone are inadequate. Fish need healthy and abundant habitat for sustainable commercial and recreational fisheries.
- **Resiliency** – Restoring coastal wetlands knocks down storm waves and reduces devastating storm surges before they reach the shore, protecting lives, property, and vital infrastructure for the nearly 40% of Americans that live in coastal communities
- **Leverage** – Community-based restoration projects leverage 3-5 times the federal investment through private matching funds, amplifying the federal investment and impact.

Thank you for taking our requests into consideration as you move forward in the Fiscal Year 2017 appropriations process. We stand ready to work with you and your staff to ensure the health of our nation's estuaries and coasts.



# JAMESTOWN S'KLALLAM TRIBE

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## HOUSE COMMITTEE ON APPROPRIATIONS SUBCOMMITTEE ON COMMERCE, JUSTICE, SCIENCE AND RELATED AGENCIES “2017 APPROPRIATIONS TESTIMONY FOR DEPARTMENTS OF JUSTICE AND COMMERCE

Thursday, March 31, 2016

Written Testimony of

**THE HONORABLE W. RON ALLEN, TRIBAL CHAIRMAN/CEO  
JAMESTOWN S'KLALLAM TRIBE**

On behalf of the Jamestown S'Klallam Tribe, I am pleased to submit this written testimony on our funding priorities and requests for the Fiscal Year 2017 Department of Justice and Department of Commerce Budgets.

### ***TRIBAL SPECIFIC – DEPARTMENT OF JUSTICE***

1. Tribal Courts - \$20,000 (Office of Justice Programs)
2. DOJ Transparency Regarding Available Programs and the Effectiveness of CTAS

### ***REGIONAL REQUESTS AND RECOMMENDATIONS – Department of Commerce***

1. Provide \$110 million for the Pacific Coastal Salmon Recovery Fund (NOAA/NMFS)
2. Provide \$14.7 million for the Pacific Salmon treaty, including the additional \$3 million for the 2008 Chinook Salmon Agreement (NOAA/NMFS)
3. Provide \$20.3 million for the Mitchell Act Hatchery Program (NOAA/NMFS)

### ***NATIONAL REQUESTS AND RECOMMENDATIONS - DEPARTMENT OF JUSTICE***

1. Hold Indian Country Programs Harmless from Budgetary Reductions, Rescissions and Sequestration
2. Provide Funding to the Civil Rights Commission to Update the Quiet Crisis Report of 2003
3. Fully Fund the Tribal Law and Order Act
4. Fully Fund Violence Against Women Act (VAWA) Extend the Bureau of Prisons Pilot Project for Violent Offenders
5. Eliminate Competitive Grant Funding
6. Create a Ten Percent Tribal Set-Aside for Victims of Crime Act Funding
7. Support the requests and recommendations of the National Congress of American Indians

### ***TRIBAL SPECIFIC - Tribal Courts – Flexible 7% Tribal Set-Aside for all Discretionary Office of Justice Programs (OJP) Programs***

The Jamestown S'Klallam Tribe has repeated advocated for a 7% Tribal set-aside from all discretionary Office of Justice Programs (OJP) programs to address public safety and Tribal criminal justice needs in Indian country. This 7% set-aside would provide a more flexible grant structure to Tribes, which was envisioned to complement the DOJ's Coordinated Tribal Assistance Solicitation (CTAS). We now know that this streamlined application model will never achieve its intended success unless and until it is accompanied by a streamlined funding mechanism. Stable funding for Tribal courts is a prerequisite to ensure a safe, healthy and thriving Tribal community. Although Congress and the Administration have taken steps in



recent years to try and address some of these concerns through the passage of the Tribal Law and Order Act (TLOA) of 2010 and the Reauthorization of the Violence Against Women Act (VAWA) of 2013, significant funding is needed in order to implement these new authorities to address the crisis level need in Indian country and elevate the safety and wellness of our Tribal citizens and communities. Tribal court systems are evolving to meet the increasing demands of Tribal communities and ensure that Tribal citizens are provided with adequate legal representation and protection. Under TLOA and VAWA Tribal courts are required to expand judicial services and meet certain costly thresholds, including, providing public defenders, recording criminal proceedings, and retaining legally trained and licensed Tribal judges. Without adequate funding for Tribal court systems, decisions to arrest, prosecute and detain will be based on financial restraints rather than in the best interest of public safety.

### **DOJ Transparency Regarding Available Programs and Effectiveness of CTAS**

In FY2010, DOJ launched the Coordinated Tribal Assistance Solicitation (CTAS). As noted above the CTAS program is not supported by a funding mechanism that will support success of and has created other challenges and gridlocks for Tribes. While CTAS grants can be used for a variety of justice programs and services in nine different areas the application process is highly competitive, tedious and complex and there are many restrictions imposed on how the funds may be utilized. It has taken numerous staff members a number of weeks to fill out and apply for the CTAS program with no guarantee that funding will be awarded. The process must be simplified and streamlined. There is also a lack of transparency, coordination and communication with respect to the programs and services that are available for Tribes to access through CTAS or other Indian- centric programs at DOJ. We would like an accurate accounting of all of the programs, services and funding that is available for Tribes; how the funds are being distributed; the percentage of the dollars that have been received by the Tribes; steps DOJ has taken to coordinate with other agencies and Tribal governments to implement Tribal priorities and practices that bolster Tribal justice systems and an analysis on the effectiveness and deficiencies of CTAS.

### **REGIONAL REQUESTS AND RECOMMENDATIONS - NOAA**

**1. \$110 million for the Pacific Coastal Salmon Recovery Fund (NOAA/NMFS) -** The FY16 appropriations provided a total of \$65.0 million. These funds have decreased from the peak of \$110.0 million in FY02. The Tribes' overall goal in the PCSRF program is to restore wild salmon populations while the key objective is to protect and restore important habitat in Puget Sound and along the Washington coast. These funds support policy and technical capacities within Tribal resources management to plan, implement, and monitor recovery activities.

**2. \$14.7 million for the Pacific Salmon Treaty - The U.S. Section estimates that this funding is needed to implement national commitments created by the Treaty (NOAA/NMFS) -** The Pacific Salmon Commission (PSC) establishes fishery regimes, develops management recommendations, assesses each country's performance and compliance with the treaty, and is the forum for all entities to work towards reaching an agreement on mutual fisheries issues

**3. \$20.3 million for the Mitchell Act Hatchery Program (NOAA/NMFS) -** Funding is provided for the operation and maintenance of hatcheries that release between 50 and 60 million juvenile salmon and steelhead in Oregon and Washington. This program has historically provided fish production for

Testimony of W. Ron Allen, Tribal Chairman/CEO  
Jamestown S'Klallam Tribe

March 31, 2016  
Page 3

Tribal treaty and non-Tribal commercial and recreational fisheries in the Columbia River, and also contributes to ocean fisheries from Northern California to Southeast Alaska.

## **NATIONAL REQUESTS AND RECOMMENDATIONS DEPARTMENT OF JUSTICE**

### **1. Hold Indian Country Programs Harmless from Budgetary Reductions, Rescissions and Sequestration**

Decades of unfulfilled Federal obligations has devastated Tribal communities who continue to face persistent shortfalls and overwhelming unmet needs. Until Tribes attain exclusive taxing jurisdiction within their Tribal lands, Federal support remains critical to ensure the delivery of essential governmental services to our Tribal citizens. The Federal trust obligation must be honored and vital programs and services for Tribes must be sustained and held harmless in any budgetary deal enacted to reduce the national deficit.

### **2. Civil Rights Commission – “Quiet Crisis Report 2003”**

We urge you to provide funding for the United States Commission on Civil Rights to update the “A Quiet Crisis Report”. The 2003 Report assessed the adequacy of Federal funding and provided data on the unmet need in Indian country. The study highlighted the fact that Federal funding was insufficient to address the basic and urgent needs of American Indian/Alaska Native people funding gaps for Indian programs. This Report is an important tool that Tribes can use to demonstrate budget needs.

### **3. Fully Fund the Tribal Law and Order Act (TLOA)**

The Tribal Law and Order Act was an important step in empowering Tribes to better address the unique public safety challenges and reduce the prevalence of violent crime in Indian country. However, effective implementation of TLOA is contingent upon adequate Federal funding. Funding is needed to implement the comprehensive and improved measures that were enacted to address the public safety crisis in Tribal communities. The entire Tribal justice system is dependent on this funding to carry out law enforcement, court, and detention functions, and to provide rehabilitation and preventive services.

### **4. Extend the Bureau of Prisons Pilot Project for Violent Offenders**

In 2010, the Bureau of Prisons (BOP) launched a pilot project to house certain Tribal offenders sentenced in Tribal courts in Federal prisons. The program allows any Federally-recognized Tribe to request that BOP incarcerate up to 100 Tribal violent offenders at a time under the authorities of TLOA. A 2014 Report was submitted to Congress that provided details on the status and recommendations of the program and the BOP affirmed its support for the program and included a recommendation to make the current pilot program permanent. We implore Congress to heed this recommendation and reauthorize and make permanent the BOP pilot project.

### **5. Eliminate Competitive Grant Funding**

Grant funding is intended to be temporary, yet, many Federal agencies, including DOJ use grants as the primary funding mechanism for Tribal Justice Programs. Tribal courts and justice systems are vital to the communities that they are operating in but they cannot be effective and efficient if they are forced to operate on grant funding. Many Tribes cannot afford to provide additional financial assistance to their justice systems and often find themselves in a precarious and difficult

position because when the funding runs out the system is forced to shut down. Many successful and innovative Tribal justice programs have disappeared because the grant cycle has ended. Grant funding undermines core Self-Governance tenants and hinders the Tribes ability to redesign programs and services that better address the needs of their communities. It creates uncertainty in planning, includes extensive regulation and overly burdensome reporting requirements, restricts the use of indirect costs, and, forces Tribes to compete against each other under DOJ's priorities and guidelines. We urge congress to end the practice of using grants and competitive processes to fund justice systems in Indian country and establish a permanent recurring base funding system for Tribally determined justice priorities.

#### **6. Fully Fund Violence Against Women Act (VAWA)**

Violence against Native women has reached epidemic proportions. The root cause of these high rates of violence was a justice system that forced Tribal governments to rely on distant Federal, and in some cases, state officials to investigate and prosecute incidences of domestic violence committed by non-Natives against Native women. The statistics on violence against Native women show that outside law enforcement has proven ineffective in addressing these crimes of violence. Between 2005 and 2007, U.S. Attorneys declined to prosecute nearly 52 percent of violent crimes that occurred in Indian country; and 67 percent of cases declined were sexual abuse related cases. It is unconscionable to force Tribes to submit to a system of justice that declines to prosecute over half the criminal cases brought before it and leaves our Native women without judicial recourse. On some reservations, Native women are murdered at a rate that is 10 times the national average. In 2016, \$2.5 million was appropriated for Tribes to implement the new VAWA provisions.

#### **7. Create a Ten Percent (10%) Tribal Set-Aside for Victims of Crime Act Funding**

Crime victimization rates on Tribal lands have been estimated as much as 250% higher than the national rate and the rate of murder of American Indian/Alaska Native women on some reservations are 1000% higher than the national average. Tribal governments, like state governments, are responsible for addressing the needs of victims in their communities. . Congress created the Crime Victims Fund in 1984 with the idea that money collected from those who commit crimes should be used to assist those that have been victimized. Each year, the fund is financed by the collection of funds, penalties and bond forfeitures from defendants convicted of Federal crimes. It is important to note that the fund receives no tax payer dollars. DOJ disburses funds to states and other entities. Despite the devastating rates of victimization in Tribal communities, Indian Tribes have largely been left out of the fund. In recent years, distributions from the fund have been about \$700 million. Collections, however, were as high as \$2.8 billion in 2013 and the balance of funds in the account is approximately \$13 billion dollars. Congress in 2015 and 2016 increased the distributions to \$2.3 billion. Indian Tribes are only able to access these dollars through state pass through grants or very limited short term competitive DOJ grants. Many states do not provide funds to Tribes for victim services and the vast majority of Tribes are unable to access these funds at all. Congress could remedy this situation by enacting a 10% set aside of VOCA funds for Tribes.

I would like to extend my thanks to the Subcommittee for an opportunity to submit testimony on the FY2017 Appropriations for DOJ and DOC.

Statement of the Institute of Makers of Explosives  
Submitted by: John Boling, Director of Government Affairs  
For the Subcommittee on Commerce, Justice, and Science and Related Agencies  
United States House of Representatives  
March 25, 2016

FY 2017 DOJ Congressional Budget Submission for the Bureau of Alcohol, Tobacco, Firearms  
and Explosives

Interest of the IME

The Institute of Makers of Explosives (IME) is a nonprofit association founded over a century ago to provide accurate information and comprehensive recommendations concerning the safety and security of commercial explosive materials. Our mission is to promote safety and protection of employees, users, the public and the environment, and to encourage the adoption of uniform rules and regulations in the manufacture, transportation, storage, handling, use and disposal of the explosive materials used in blasting and other essential operations. IME represents U.S. manufacturers, distributors and motor carriers of commercial explosive materials and oxidizers as well as other companies that provide related services. The majority of IME members are “small businesses” as determined by the U.S. Small Business Administration.

Millions of metric tons of high explosives, blasting agents, and oxidizers are consumed annually in the United States. These materials are essential to the U.S. economy. Energy production, construction, mining, quarrying, demolition, and other specialized applications begin with the use of commercial explosives. IME member companies produce 99 percent of these commodities. These products are used in every state and are distributed worldwide. The ability to manufacture, distribute, and use these products safely and securely is critical to this industry.

Commercial explosives are highly regulated by a myriad of Federal and state agencies. The Bureau of Alcohol, Tobacco, Firearms and Explosives (ATF) plays a predominant role in assuring that explosives are manufactured, identified, tracked, and stored in a safe and secure manner and received only by authorized persons. It is in the standpoint, as a highly regulated industry that shares ATF’s focus on safety and security, that we offer the following perspectives on the Fiscal Year 2017 Budget Submission.

ATF’s Explosives Regulatory Program

IME understands the difficult decisions that ATF and the Federal government face when allocating scarce resources. We also understand the other important work and responsibilities that ATF is assigned. Nevertheless, the members of IME, their employees and customers rely on a properly funded regulatory program. The success of ATF’s explosives programs in preventing the misappropriation of commercial explosives should not be seen as an opportunity to reallocate funding, but that a base level of funding is necessary for ATF to retain a cadre of trained personnel to perform these vital services. The commerce of explosives is so closely regulated that failure to provide adequate personnel and resources can be detrimental to our industry, our customers, our employees, and the industrial sector of the U.S. economy.

On January 13, 2016, IME sent a letter to the House and Senate Subcommittees on Commerce, Justice and Science Appropriations, requesting that no funds be reprogrammed from FY 2016 appropriations used by ATF to administer the Bureau's explosives programs in order to implement the President's recent executive order to reduce gun violence. We were pleased to see no reprogramming took place, and instead the administration is seeking programmatic increases to fund the initiative.

ATF is the primary Federal law enforcement agency that regulates the explosives industry, licensing and permitting businesses and individuals to engage in the business of manufacturing, importing, or dealing in explosives, or receiving or transporting explosives materials.<sup>1</sup> By law, ATF must inspect an estimated 10,000 explosives licensees and permittees at least once every three years. ATF's workload also involves ensuring background checks of employee possessors of explosives and responsible persons. The Bureau estimates that the requirement to inspect 100 percent of the licensees and permittees within their three-year license/permit cycle consumes between 25 and 41 percent of available inspector resources in any given year. In the budget submission, ATF acknowledges the staffing difficulties it faces in the next few years as hundreds of experienced personnel with highly specialized skill sets are expected to retire. IME urges Congress to review ATF's staffing needs and ensure the Bureau has sufficient explosive expertise that is critical to the success of the explosives-related programs.

In past years, IME has recommended that ATF harmonize its vetting and clearance procedures with those used by other Federal programs. Doing so would allow ATF's vetting program to be reciprocally recognized by these programs and save time and resources of the agency and the individuals being vetted. In 2015, the Department of Homeland Security moved to accept ATF's vetting program. However, concerns remain about the equivalency of the ATF program with other Federal vetting programs because the Bureau's program lacks recurrent vetting and fails to prohibit individuals on the Terrorist Watchlist. We strongly encourage efforts to harmonize ATF's vetting standards and procedures with those used by other agencies.

#### ATF-Industry Partnership

##### *National Center for Explosives Training and Research*

IME would like to commend ATF for its work at the National Center for Explosives Training and Research (NCETR), including training, testing and research, which is critically important for the safety and security of explosive materials. IME and its member companies employ recognized subject matter experts in the safe and secure development, manufacture, handling and use of commercial explosives. IME welcomes continued opportunities to partner with NCETR on research and testing initiatives related to commercial explosives and encourages the Subcommittee to ensure that NCETR receives sufficient funding and resources to continue its critical work.

##### *United States Bomb Data Center*

The U.S. Bomb Data Center (USBDC) is responsible for collecting and storing explosives-related incident data, to include information on thousands of explosives incidents investigated by

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<sup>1</sup> FY 2017 ATF Budget Submission, page 6.

ATF and other Federal, state, and local law enforcement agencies. While this data helps government entities perform trend analysis and compare incidents for similarities and crime methodologies, USBDC data also helps the industry in efforts to identify any potential weaknesses or reaffirm the effectiveness of safety and security practices, and to update industry standards accordingly. In 2013, USBDC reinstated the issuance of the Explosives Incident Report (EIR) for calendar years 2010-2013, including valuable information on fillers of improvised explosives devices and on thefts, losses, and recoveries categorized by the type and amount of explosives involved. IME has recently advised that 2014 data is forthcoming, and IME commends ATF on its commitment to release the EIR data to industry at least once per year.

#### *IMESAFR*

IME has spent years developing a credible alternative to strict interpretation of quantity distance tables used to determine safe setback distances from explosives. The result is a scientifically-based computer model for assessing the risk from a variety of commercial explosives activities called IMESAFR.<sup>2</sup> ATF and other regulatory agencies are recognizing the value of IMESAFR. In April 2015, we were pleased to see ATF approve the first variance from the American Table of Distances (ATD) based on risk assessment using IMESAFR. NCETR has partnered with IME on efforts to further validate IMESAFR data and ensure transparency of the scientific process by participating in testing and supporting an IMESAFR Science Panel. We welcome and strongly encourage ATF's continued support and leadership related to IMESAFR. The benefits of risk-based modeling should continue to be recognized by ATF, and resources should be provided to develop policies that allow the use of such models to meet regulatory mandates.

#### International Engagement

One of ATF's strategic goals for 2010-2016 is, "Explosives, Bombs, and Bombings: Advance domestic and international explosives expertise to prevent, detect, and investigate acts of violent crime and terrorism, and to enhance public safety." As the ATF works through the process of updating and revising its strategic plan for 2017 and beyond, IME encourages ATF to remain publicly committed to working at the international level to participate in international regulatory forums that advocate for the safety and security of explosives and that promote consistency in standards and policies. The United States must be a leader in explosive safety and security, and IME applauds ATF for re-engaging with the international regulatory explosives community.

#### *Marking Harmonization Efforts*

Explosive manufacturers and importers are required to mark products with codes to aide law enforcement agencies in the U.S. and foreign countries in tracing lost or stolen materials. Additionally, others in the global supply chain also cooperate in these tracing efforts. However, more and more government entities are imposing their own unique system of identification

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<sup>2</sup> IMESAFR was built on the Department of Defense Explosives Safety Board's software model, SAFER. The DDESB currently uses SAFER and table-of-distances methods to approve or disapprove Department of Defense explosives activities. Not only can IMESAFR determine the amount of risk presented, but it can also determine what factors drive the overall risk and what actions would lower risk, if necessary. The probability of events for the activities were based on the last 20 years of experience in the U.S. and Canada and can be adjusted to account for different explosive sensitivities, additional security threats, and other factors that increase or decrease the base value.

marks without recognizing each other's marks. These redundant and competing marks create non-tariff barriers to trade and hampers successful tracing and investigation. IME has petitioned the United Nations (UN) Sub-Committee of Experts on the Transport of Dangerous Goods (TDG) to include in its model regulations a single, globally-harmonized explosives marking protocol. ATF has issued a letter in support of IME's UN proposal to the U.S. head of delegation, the Department of Transportation, and assigned a representative to participate with the U.S. delegation. While the UN did not approve IME recommendations in 2015, we are again working to see these standards adopted in 2016. We thank ATF for the support and ask for continued support as we move forward with this important issue.

### Industry Standards

IME holds in high regard the statutory obligation that ATF take into account industry's standards of safety when issuing rules and requirements. We continue to fulfill this obligation through our development of industry best practices for safety and security, membership in relevant standard-setting organizations, and active participation in forums for training. We have offered to ATF recommendations that we believe will enhance safety and security through our participation in the rulemaking process, in the Bureau's important research efforts, and in other standard-setting activities.

On this issue, IME notes that ATF affirms its "use [of] risk-based assessments to focus limited inspection resources on entities that have been identified as at risk for non-compliance."<sup>3</sup> IME firmly believes that using risk-based measures will help ATF focus its resources where it can maximize the value of its efforts.

### Conclusion

ATF plays a critical role in helping the explosives industry achieve and maintain a strong safety and security record. Even though explosives may be dangerous materials when in the wrong hands, the manufacture and distribution of explosives is accomplished with a remarkable degree of safety and security. The use of explosives is essential to sustain the economy, and the explosives industry and the general public are dependent on ATF. ATF must have adequate resources to fulfill its mission and keep the American public safe. It is up to Congress to ensure that ATF has the resources it needs. IME strongly recommends full funding for ATF's explosive programs.

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<sup>3</sup> FY 2017 ATF Budget Submission, page 15.



**Testimony of Tara L. Perry, Chief Executive Officer  
National Court Appointed Special Advocate Association**

**United States House of Representatives  
Committee on Appropriations  
Commerce, Justice, Science, and Related Agencies Subcommittee**

**Fiscal Year (FY) 2017 Department of Justice Funding**

**March 28, 2016**

Chairman Culberson, Ranking Member Honda, and Members of the Commerce, Justice, Science, and Related Agencies Subcommittee, thank you for the opportunity to submit remarks on the Department of Justice (DOJ) FY 2017 budget, including our request for full funding of the Court Appointed Special Advocates (CASA) Program through the Office of Juvenile Justice and Delinquency Prevention (OJJDP) at the Congressionally-authorized level of \$12 million.

CASA/Guardian ad Litem (GAL) advocacy is a well-established model operating in 49 states and the District of Columbia that is strongly associated with improved long-term outcomes for child victims of neglect and abuse, an underserved population whose needs continue to be both deeply profound and devastating. With Congressional support at the fully authorized level, National CASA will enhance and advance specialized training, tools and resources to continue delivering vital one-on-one advocacy that addresses the increasingly complex needs of traumatized children in foster care who have been abused or neglected by their primary caregivers—the very individuals responsible for their safety and care.

The children served by our network are among the most vulnerable in America. Abused and neglected children are more likely to have educational performance and other issues that impact their prospects for future employment and stability within the community. They are also at significantly higher risk of juvenile delinquency, incarceration in adulthood and homelessness as they age out of the system. Without the intervention of a CASA/GAL advocate, the outlook for a child that passes through the foster care system is bleak.

These tragic outcomes have a hefty impact on federal, state, and local spending, given that at least one-quarter of the DOJ budget is dedicated to funding our nation's prison system. At the same time, the Centers for Disease Control and Prevention (CDC) estimates the economic and social costs of child abuse and neglect to total \$124 billion nationwide per annum. Independent research has shown that local CASA/GAL programs offer an effective service to child victims of





abuse and neglect that improves outcomes, increases the efficiency of our court systems, and reduces the amount of time these victims spend in the foster care system—amounting to tens of millions of dollars in federal and state taxpayer savings annually.

Last year, CASA/GAL programs leveraged community-based resources to serve 251,000 abused and neglected children in foster care, but more than 400,000 children remain without the powerful intervention of a CASA/GAL advocate. These children are currently “going it alone”—navigating their way through the complex legal system and unfamiliar out of home placements, which could include foster homes or congregate care. Our advocates get to know these child victims outside the courtroom. They are involved in every aspect of the child’s life—sometimes as the only caring and consistent adult presence—making it more likely that they will find safe, permanent homes where they can thrive and reach their full potential. These efforts require specialized training, standards, and resources to support a nationwide system of programs that adhere to the highest quality of services and care for the child victim, which National CASA Association provides to its state and local programs.

With DOJ support, the Association sets national standards and provides assessment, accountability and evaluation of these standards across 949 local, state, and tribal programs. DOJ’s investment enables National CASA to deliver evidence-based practices, intensive technical assistance, direct program guidance and quality assurance to serve children across the country.

Additionally, given the nature of the CASA/GAL advocate’s intensive work with child victims of abuse and neglect, CASA programs employ rigorous screening, training, and supervision nationwide, with Congressional support, to ensure consistent quality for victims who directly benefit from having their needs and rights championed in the courtroom and in the community. Comprehensive pre-service, in-service, and issue-focused training curricula—including training in disproportionality, ethnic and racial identity, and working with older youth—ensure a cutting edge approach to victim services centered on the child thriving well into the future as a member of the community.

Unfortunately, child victimization and maltreatment is on the rise, exacting a heavy toll on our nation’s children and on society more broadly. Emerging issues such as the commercial sexual exploitation of children and our nation’s growing opioid epidemic—for which children account for a growing number of victims—require greater specialization for our advocates to deliver the most effective advocacy, and, as the Victims of Child Abuse Act requires, to serve every child victim. Federal support at the fully authorized level is critical to bridging advocacy training and best practice tools to address these increasingly common tragedies and bolster support around the issues of child trafficking and substance abuse specifically.



Even as we commit to enriching the quality of CASA/GAL advocacy under these increasingly complex circumstances, our national network is committed to sustainably increasing growth to serve a targeted and record 270,000 child victims of abuse and neglect, with full funding at \$12 million.

Caring, dedicated, and extensively trained CASA/GAL advocates bring about positive changes in the lives of child victims. Full funding is needed to expand the advocate pipeline, enhance the training, resources, and services provided to and through CASA/GAL programs, and strengthen outcomes for future members of our nation's workforce. We can change the trajectory for victims of child abuse and neglect, together, with Congressional support.

We urge the Subcommittee to fund the Court Appointed Special Advocates Program at \$12 million in FY 2017 to address the overwhelming need for dedicated advocacy on behalf of child victims of abuse and neglect. Thank you for your consideration.



CONSORTIUM of SOCIAL SCIENCE ASSOCIATIONS

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Testimony in Support of Fiscal Year 2017 Funding for the  
National Science Foundation, Census Bureau, National Institute of Justice, and  
Bureau of Justice Statistics

Prepared for the Subcommittee on Commerce, Justice, Science and Related Agencies  
Committee on Appropriations  
United States House of Representatives  
Submitted by Wendy A. Naus, Executive Director  
Consortium of Social Science Associations  
March 31, 2016

On behalf of the Consortium of Social Science Associations (COSSA), I offer this written testimony to the House Appropriations Subcommittee on Commerce, Justice, Science and Related Agencies for inclusion in the official committee record. For fiscal year (FY) 2017, COSSA urges the Committee to appropriate \$8 billion for the National Science Foundation (NSF), \$1.634 billion for the Census Bureau, \$48 million for the National Institute of Justice (NIJ), and \$58 million for the Bureau of Justice Statistics (BJS).

COSSA serves as a united voice for a broad, diverse network of organizations, institutions, communities, and stakeholders who care about a successful and vibrant social science research enterprise. We represent the collective interests of all fields of social and behavioral science research, including but not limited to sociology, anthropology, political science, psychology, economics, statistics, language and linguistics, population studies, law, communications, educational research, criminology and criminal justice research, geography, history, and child development. *Social science research* studies social contexts across various time and spatial scales, including economic, cultural, demographic, and political contexts. *Behavioral research* seeks to better understand learning, cognition, emotion, temperament, motivation, and biobehavioral interactions.

Social and behavioral science research is supported across the federal government, including at the National Science Foundation and the Department of Justice. Further, federal statistics collected by the Census Bureau and other federal statistical agencies provide important data needed to conduct social science research that informs policy decisions. Taken together, federal social and behavioral science and statistical data help to provide us with answers to complex, human-centered questions such as:

- How to convince a community in a path of a tornado to heed warnings; or

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AMERICAN ANTHROPOLOGICAL ASSOCIATION • AMERICAN ASSOCIATION FOR PUBLIC OPINION RESEARCH • AMERICAN ECONOMIC ASSOCIATION • AMERICAN EDUCATIONAL RESEARCH ASSOCIATION • AMERICAN POLITICAL SCIENCE ASSOCIATION • AMERICAN PSYCHOLOGICAL ASSOCIATION • AMERICAN SOCIETY OF CRIMINOLOGY • AMERICAN SOCIOLOGICAL ASSOCIATION • AMERICAN STATISTICAL ASSOCIATION • ASSOCIATION OF AMERICAN LAW SCHOOLS • LAW AND SOCIETY ASSOCIATION • LINGUISTIC SOCIETY OF AMERICA • MIDWEST POLITICAL SCIENCE ASSOCIATION • NATIONAL COMMUNICATION ASSOCIATION • POPULATION ASSOCIATION OF AMERICA • SOCIETY FOR PERSONALITY AND SOCIAL PSYCHOLOGY • SOCIETY FOR RESEARCH IN CHILD DEVELOPMENT

- What are the best strategies for slowing the HIV/AIDS epidemic, or more recently, the Ebola crisis; or
- How to thwart cybercrime and protect Americans' privacy and security in an increasingly connected world.

In addition, new findings continue to increase the efficiency of our industries, improve the quality of K-12 education, help us understand crime patterns and evaluate prevention strategies, help manage our natural resources, keep our troops safe, help us to be informed as consumers, and allow paralyzed individuals to communicate. Among the countless innovations enabled by federal support for basic social science research are GPS, telecommunications spectrum auctions, life-saving kidney exchanges, and warning systems to protect lives and property from extreme weather events.

In short, knowledge derived from social and behavioral science research has made our population healthier, our democracy fairer, our nation safer, and our economy stronger. Without these sciences, policy-making on major national issues would not be based on evidence, and billions of dollars would be wasted.

### **National Science Foundation (\$8 billion)**

First, I wish to thank the Subcommittee for its longstanding support for federal science agencies. Despite the tough, ongoing fiscal challenges, the Subcommittee has maintained funding for basic research as a priority.

**COSSA joins the broader scientific community and the 143 House Members who signed on to the March 22, 2016 bipartisan letter to the Subcommittee in support of \$8 billion for NSF in FY 2017, an increase of 6.7 percent.** This amount would put NSF back on a growth trajectory and would allow the agency to recover some of the purchasing power lost in recent years due to sequestration and caps on discretionary spending.

NSF funds basic scientific discovery, workforce training, and state-of-the-art facilities that keeps the U.S. ahead of our global scientific competitors. NSF supports about a quarter of all federally-funded basic scientific research conducted at colleges and universities nationwide. Most notably, NSF serves as the largest single funder of university-based basic social and behavioral science research. While the Social, Behavioral, and Economic Sciences Directorate (SBE) represents only about 3.6 percent of the entire NSF research budget, it supports more than two-thirds (67%) of total federal funding for academic basic research in the social and behavioral sciences.

Social and behavioral science discoveries funded by NSF have improved people's lives by:

- Improving public health.
- Improving the safety of our troops in combat areas through cultural research and understanding.

- Helping us understand how to prepare for and respond to natural and human-made disasters.
- Enhancing teaching and learning in education.
- Reducing violence among our youth.
- Improving the effectiveness of the criminal justice system.
- Generating billions of dollars for the U.S. Treasury with the creation of the telecommunications spectrum auctions.

As you know, the Administration requested an increase of only 1.3 percent in discretionary funding for NSF, while proposing that Congress approve one-time mandatory funding in the amount of \$400 million to bring the total NSF budget of \$8 billion for FY 2017. We recognize that the addition of new mandatory funding is not likely this year; however, I hope the proposed funding maneuver will not distract the Committee from the real needs of the agency. As Dr. France Córdoba, NSF Director, testified before the House earlier this month, nearly \$4 billion worth of projects that are reviewed as “very good” to “excellent” are left on the cutting room floor each year due to inadequate funding. She added that this essentially invites researchers, especially new and young investigators, to leave the field and pursue other STEM careers. Simply put, there are far more exciting, potentially transformative research ideas out there than there is support. Further, as you may recall, the *America COMPETES Reauthorization Act of 2010* sought a budget level of \$8.3 billion by FY 2013. While times have changed and sequestration remains a reality, we need not abandon the scientific aspirations Congress set for NSF in the original *America COMPETES Act of 2007* and its reauthorization in 2011.

Finally, as stated in the bipartisan letter, a shortage of five million STEM professionals can be expected by 2020 if NSF, which plays a central role in turning out the next generation of scientists, is not fully funded.

**Second, COSSA joins the 34 House Members who signed the March 23, 2016 bipartisan letter urging the Committee to maintain current practice when appropriating funds for NSF.** The scientific community strongly contends that experts at NSF, the merit-review process, and the vast network of scholars around the country who provide technical and content expertise to the NSF leadership are best suited to advise the agency on the most promising science worthy of support. Making a change to current practice—such as by appropriating specific, arbitrary amounts for each NSF directorate—would place scientific disciplines in direct competition with one another for what are already scarce resources, thereby discouraging interdisciplinary science. In addition, it would dismantle the scientific infrastructure that has been assembled over the last several decades by side-stepping the multifaceted, merit-based process that has served the agency so well since its founding. For this reason, **we hope the House CJS Appropriations Bill will maintain the current practice of appropriating funds to the Research & Related Activities account, leaving NSF with the flexibility to fund the most promising science across all fields.** Further, in the spirit of the bipartisan letter, which argues that “NSF’s appropriations [should] not include arbitrary funding levels for its research directorates,” **we urge the Committee to resist pressure to include report language that would single out individual directorates for disproportionate treatment, as we saw in the FY 2016 House CJS bill.** Such

language would be in direct conflict with the intentions of the bipartisan letter and remarks made by the Subcommittee Chairman at the NSF hearing earlier this year stating that he has no desire to appropriate by directorate.

### **Census Bureau (\$1.5 billion), U.S. Department of Commerce**

**COSSA urges the Committee to appropriate \$1.634 billion to the U.S. Census Bureau in FY 2017.**

Accurate, objective, representative, timely, reliable and accessible data and statistics are necessary ingredients to the conduct of evidence-based analyses of federal programs.

Fiscal year 2017 is a critical one for the Census Bureau as we near the 2020 Decennial Census. The Census Bureau will be working to complete production of interoperable systems for the reengineered decennial. To do so, the Bureau requires funding to fully evaluate and develop new methods and operations. COSSA urges Congress to appropriate \$778 million for 2020 Census planning, a reasonable request at this critical juncture in the decennial planning cycle that will allow the agency to complete its sweeping design reforms and prepare for the 2018 End-To-End Readiness Test.

**One critically important function of the Census Bureau is the American Community Survey**, which is the nation's only source of comparable (across geography), consistent (across time), timely (updated annually), high quality demographic and socio-economic data for all communities in the U.S. The ACS replaced the Census "long form" in 2005 at the behest of Congress. The accuracy of the data collected by the ACS relies on the mandatory nature of the program. If successful, efforts to make the ACS voluntary could translate to a decline in response rates of at least 20 percent and an increase in survey costs by about \$100 million, according to agency estimates. More importantly, reliable socio-economic data would be lost for entire communities, especially those in rural areas. COSSA asks Congress to appropriate \$251.1 million for the American Community Survey (ACS). Funding at this level will allow the Census Bureau to maintain a valid sample size and continue research on new methods and streamlined operations to reduce respondent burden, improve question wording, and control costs. We further ask that the mandatory status of the ACS be maintained.

### **National Institute of Justice (\$48 million) and Bureau of Justice Statistics (\$58 million), U.S. Department of Justice**

**COSSA urges the Committee to appropriate \$48 million for the National Institute of Justice (NIJ) and \$58 million for the Bureau of Justice Statistics (BJS) within the U.S. Department of Justice (DOJ).** NIJ serves as the research arm of the Department of Justice, playing a critical role in helping the agency to understand and implement science-based strategies for crime prevention and control. It supports rigorous social science research that can be disseminated to criminal justice professionals to keep communities safe and prevent and reduce crime. The Bureau of Justice Statistics (BJS) is one of 13 principal federal statistical agencies. BJS produces data that provides statistical evidence needed by researchers and criminal justice policy decision makers. Taken together with NIJ, these investments represent the only dedicated sources of federal

research support committed to enhancing our understanding of crime and the criminal justice system, including around topics like victimization, law enforcement, recidivism and reentry, drugs and crime, and tribal justice.

Social science research supported by the agencies informs policymaking on timely crime and justice issues like:

- Human trafficking;
- Evaluation of anti-gang programs;
- Policing;
- Children exposed to violence;
- Sentencing alternatives to incarceration;
- Elder abuse; and
- Reentry and probation.

Demand by policymakers and criminal justice professionals for rigorous, objective research on policing, mental health, sentencing reform, and other timely topics has increased to unprecedented levels in recent years. However, at the current funding levels, NIJ and BJS simply do not have the capacity to meet the demand. In addition to our request of \$48 million for NIJ for FY 2017, we further urge Congress to approve the Administration's request to increase the Research, Evaluation, and Statistics set-aside from 2 to 3 percent, providing additional flexibility to the agency to take on new, timely research questions as they arise.

Thank you for the opportunity to present this testimony on behalf of the social and behavioral science research community. Please do not hesitate to contact me should you require additional information.

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**Human Factors  
and Ergonomics  
Society**

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**Official Written Testimony in Support of  
Fiscal Year 2017 Science and Research Funding**

Submitted to the House Subcommittee on Commerce, Justice, and Science, and Related  
Agencies; Committee on Appropriations  
United States House of Representatives  
March 15, 2016

Submitted by

William S. Marras, Ph.D., CPE, President, Human Factors and Ergonomics Society  
Lynn Strother, Executive Director, Human Factors and Ergonomics Society

On behalf of the Human Factors and Ergonomics Society (HFES), we are pleased to provide this written testimony to the House Appropriations Subcommittee on Commerce, Justice, and Science, and Related Agencies for the official record. **HFES urges the Subcommittee to provide \$8 billion for the National Science Foundation (NSF), in the fiscal year (FY) 2017 appropriations process.**

HFES and its members recognize and appreciate the challenging fiscal environment in which we as a nation currently find ourselves; however, we believe strongly that investment in scientific research serves as an important driver for innovation and the economy and for maintaining American global competitiveness. We thank the Subcommittee for its longtime recognition of the value of scientific and engineering research and its contribution to innovation in the U.S.

**The Value of Human Factors and Ergonomics Science**

HFES is a multidisciplinary professional association with over 4,500 individual members worldwide, including psychologists and other scientists, engineers, and designers, all with a common interest in designing safe and effective systems and equipment that maximize and adapt to human capabilities.

For over 50 years, the U.S. federal government has funded scientists and engineers to explore and better understand the relationship between humans, technology, and the environment. Originally stemming from urgent needs to improve the performance of humans using complex systems such as aircraft during World War II, the field of human factors and ergonomics (HF/E) works to develop safe, effective, and practical human use of technology. HF/E does this by developing scientific approaches for understanding this complex interface, also known as “human-systems integration.” Today, HF/E is applied to fields as diverse as transportation, architecture, environmental design, consumer products, electronics and computers, energy systems, medical devices, manufacturing, office automation, organizational design and



management, aging, farming, health, sports and recreation, oil field operations, mining, forensics, and education.

With increasing reliance by federal agencies and the private sector on technology-aided decision-making, HF/E is vital to effectively achieving our national objectives. While a large proportion of HF/E research exists at the intersection of science and practice—that is, HF/E is often viewed more at the “applied” end of the science continuum—the field also contributes to advancing “fundamental” scientific understanding of the interface between human decision-making, engineering, design, technology, and the world around us through research funded by NSF. The reach of HF/E is profound, touching nearly all aspects of human life from the health care sector, to the ways we travel, to the hand-held devices we use every day.

### **Human Factors and Ergonomics at the National Science Foundation**

HFES and its members believe strongly that federal investment in NSF will have a direct and positive impact on the U.S. economy, national security, and the health and well-being of Americans. It is for these reasons that HFES supports robust funding for the Foundation to encourage further advancements in the fields of technology, education, defense, and healthcare, among others. In the past, NSF funding for HF/E basic research has strengthened interdisciplinary partnerships allowing for a multilateral approach to technology research and development, including the human and user perspectives. The benefits of this research are not confined to one field but rather span across a range of disciplines to increase understanding of the way humans interact with technology, as well as with each other.

In particular, NSF funds HF/E research to:

- Better understand and improve the effectiveness of how individuals, groups, organizations, and society make decisions.<sup>1</sup>
- Improve understanding of the relationship between science and engineering, technology, and society, in order to advance the adoption and use of technology.<sup>2</sup>
- Gain a better understanding of how humans and computers interact to ensure the development of new devices or environments that empower the user.<sup>3</sup>
- Inform decision making in engineering design, control, and optimization to improve individual engineering components and entire systems.<sup>4</sup>

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<sup>1</sup> Decision, Risk & Management Sciences (DRMS) Program  
([http://www.nsf.gov/funding/pgm\\_summ.jsp?pims\\_id=5423](http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=5423))

<sup>2</sup> Science, Technology, and Society (STS) Program  
([http://www.nsf.gov/funding/pgm\\_summ.jsp?pims\\_id=5324&org=SES&from=home](http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=5324&org=SES&from=home))

<sup>3</sup> Human Centered Computing (HCC) Program  
([http://www.nsf.gov/funding/pgm\\_summ.jsp?pims\\_id=503302&org=IIS&from=home](http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=503302&org=IIS&from=home))

<sup>4</sup> Systems Engineering and Design Cluster  
([http://www.nsf.gov/funding/pgm\\_summ.jsp?pims\\_id=13473&org=CMMI&from=home](http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=13473&org=CMMI&from=home))

### **Conclusion**

**Given NSF's critical role in supporting fundamental research and education across science and engineering disciplines, HFES supports an overall FY 2017 NSF budget of \$8 billion. This investment funds important research studies, enabling an evidence-base, methodology, and measurements for improving organizational function, performance, and design across sectors and disciplines.**

On behalf of HFES, we would like to thank you for the opportunity to provide this testimony. Please do not hesitate to contact us should you have any questions about HFES or HF/E research. HFES truly appreciates the Subcommittee's long history of support for scientific research and innovation.

## NATIONAL CONGRESS OF AMERICAN INDIAN



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## Testimony to the House Appropriations Committee Subcommittee on Commerce, Justice, Science and Related Agencies

March 31, 2016

On behalf of the National Congress of American Indians (NCAI), this testimony addresses important programs in the Department of Justice and Department of Commerce. NCAI is the oldest and largest American Indian organization in the United States. Tribal leaders created NCAI in 1944 as a response to termination and assimilation policies that threatened the existence of American Indian and Alaska Native tribes. Since then, NCAI has fought to preserve the treaty rights and sovereign status of tribal governments, while also ensuring that Native people may fully participate in the political system. As the most representative organization of American Indian and Alaska Native tribes, NCAI serves the broad interests of tribal governments across the nation. As Congress considers the FY 2017 budget and beyond, leaders of tribal nations call on decision-makers to ensure that the promises made to Indian Country are honored in the federal budget.

Annual funding decisions by Congress are an expression of our nation's moral priorities. Numerous treaties, statutes, and court decisions have created a fundamental contract between tribal nations and the United States: tribes ceded millions of acres of land that made the United States what it is today, and in return tribes have the right of continued self-government and the right to exist as distinct peoples on their own lands. And for its part, the United States has assumed a trust responsibility to protect these rights and to fulfill its solemn commitments to Indian tribes and their members.

Part of this trust responsibility includes basic governmental services in Indian Country, funding for which is appropriated in the discretionary portion of the federal budget. Tribal governments exist to protect and preserve their unique cultures, identities, and natural environments for posterity. As governments, tribes must deliver a wide range of critical services, such as education, workforce development, and first-responder and public safety services, to their citizens. The federal budget for tribal governmental services reflects the extent to which the United States honors its promises to Indian people.

### Department of Justice

The public safety problems that continue to plague tribal communities are the result of decades of gross underfunding for tribal criminal justice systems; a uniquely complex jurisdictional scheme; and the historic, abject failure by the federal government to fulfill its public safety obligations on American Indian and Alaska Native lands. Crime rates in tribal communities are among the highest in the nation and American Indians and Alaska Natives experience rates of violent crime that are 2.5 times the national average. Residents and visitors on tribal lands deserve the safety and security that is taken for granted outside of Indian Country.

Congress has taken historic steps in recent years with the passage of the Tribal Law and Order Act in 2010 and the Violence Against Women Reauthorization Act of

2013 (VAWA 2013), both of which begin to address some of the structural barriers to public safety in tribal communities. For the promise of these laws to be fully realized, however, these laws must be fully implemented, which requires sufficient resources for tribal justice systems. Increased and streamlined funding in the following program areas will have a huge impact on safety in tribal communities for tribal citizens, residents, and visitors to tribal lands.

**Include tribal governments in disbursements from the Crime Victims Fund (a mandatory account).** The Crime Victims Fund is the federal government's primary funding source for providing services to victims of crime. Unlike state and territorial governments, who receive an annual formula distribution from the CVF, Indian tribes are only able to access CVF funds via pass-through grants at the discretion of the states or by competing for very limited resources administered by the Department of Justice. This system leaves a significant unmet need in most tribal communities—communities where crime victimization rates far exceed the national average. Last year appropriators set overall disbursements from the Crime Victims Fund at \$3 billion, the highest level ever and more than triple what they were in FY 2014. Despite this increase in overall funding, Congress failed to ensure that any of these funds would reach tribal communities. We urge appropriators to keep disbursements from the CVF at the increased level and to direct an amount equal to 10% of overall CVF disbursements to tribal governments. We urge appropriators to include bill language directing DOJ to develop a formula for disbursement of tribal CVF dollars in consultation with tribal governments.

**Create a streamlined tribal allocation across Office of Justice Programs (OJP) programs.** For several years the Administration has proposed bill language that would streamline and consolidate OJP tribal programs by allocating 7 percent from all discretionary OJP programs to address Indian country public safety and tribal criminal justice needs. In past years, both the House and Senate CJS Subcommittees have supported this request, but it has never been enacted. One of the biggest issues with DOJ funding is that it is administered as competitive funding. In order to obtain this funding, tribes – on behalf of their tribal courts – must compete against each other under priorities and guidelines established by DOJ. As a result, tribes are forced to develop projects that align with changing DOJ priorities and cannot count on funding continuing beyond the current grant period. Indian Country has too many stories of successful programs disappearing at the end of a two or three year grant cycle. A ten percent OJP tribal allocation would streamline the federal funding process by which tribes receive resources to establish tribal courts; assist in developing detention facilities; provide legal assistance; develop and maintain juvenile delinquency prevention programs; and provide substance abuse prevention programs. Further, the tribal allocation gives tribes the flexibility to develop a detailed strategy on how best to spend those resources.

**If Congress declines to adopt the flexible 10% allocation across OJP programs, restore FY 2010 levels of \$25 million in funding for the Tribal Youth Program under the Juvenile Accountability Block Grants program.** Although Native children comprise only 2.2 percent of the overall youth population, they are arrested at a rate of more than two-to-three times that of other ethnic groups. According to a recent DOJ report, “[s]ubstance abuse, depression, and gang involvement fuel a vast majority of the offenses for which American Indian juveniles are disproportionately confined.” Funding for the Tribal Youth Program has decreased significantly in recent years and should be restored to its FY 2010 level of \$25 million.

**Fun the Tribal Civil and Criminal Legal Assistance, Training and Technical Assistance (TCCLA) grant program at a level of \$3 million.** The Indian Tribal Justice Technical and Legal Assistance Act of 2000 (Public Law 106-559) authorized DOJ to award grants to non-profit entities, such as the 25 Indian Legal Services programs connected with the Legal Services Corporation (LSC), to provide civil and criminal legal assistance to both tribal governments and their justice systems and to individual indigent tribal citizens. In addition to individual representation, Indian Legal Services programs are currently assisting more than 160 tribes and/or tribal judicial systems.

**Increase funding of tribal law enforcement programs under DOJ's Community Oriented Policing Services (COPS) Grants to \$52 million.** Since the creation of the COPS Office, more than 2,000 grants totaling more than \$400 million has been awarded to tribal nations to hire more than 1,700 new or redeployed law enforcement officers. It has also helped tribes to obtain necessary law enforcement training, equipment, vehicles, and technology. Through its Tribal Resources Grant Program and Tribal Methamphetamine Program and historical programs and funding initiatives such as the Tribal Hiring Renewal Grant Program (THRGP), Tribal Mental Health and Community Safety Initiative, and the Tribal Court Pilot Program, the COPS Office has taken a proactive approach toward addressing the needs of tribal nations and has become one of the primary resources available to tribal law enforcement agencies attempting to develop and maintain a fundamental policing infrastructure and upgrade outdated equipment. Yet, there is still a tremendous unmet need within tribal justice systems for more COPS funding.

The COPS Office has acknowledged that due to limited resources, it has not been able to adequately fund tribal justice systems, particularly in the area of hiring/retaining tribal law enforcement officers. In a report released in December 2010, the COPS Office described its practice of intermittent funding as “problematic,” especially “when referring to hiring of officers.” Indian Country urges Congress to significantly increase funding for tribal law enforcement programs under the COPS program.

**Fully fund the programs authorized in the Violence Against Women Act (VAWA), including the funds authorized for tribal implementation of VAWA special domestic violence criminal jurisdiction.** It is estimated that one in three Indian women will be raped and that six in ten will be physically assaulted in their lifetimes. No area of need is more pressing or compelling than the plight of American Indian and Alaska Native women and children fleeing physical and sexual violence. OVW provides funding to tribal governments to address violence against women in their communities. OVW's largest source of funding for tribal governments is the Grants to Tribal Governments Program, which is funded via statutory allocations from other OVW programs. Fully-funding these OVW programs results in full funding for the Grants to Tribal Governments Program.

On March 7, 2013, President Obama signed into law the Violence Against Women Reauthorization Act (VAWA 2013) which recognizes and affirms the inherent sovereign authority of Indian tribes to exercise Special Domestic Violence Criminal Jurisdiction (SDVCJ) over all persons—Indian and non-Indian—who commit crimes of dating violence, domestic violence, and violations of protection orders within Indian country. The bill authorized \$5 million per year for 5 years for tribes to implement the new VAWA provisions and otherwise strengthen tribal justice systems. The tribes who have been exercising the jurisdiction report that the costs of implementing the new law have been higher than expected. We urge Congress to

appropriate the money authorized for VAWA implementation purposes so that more communities are able to take advantage of this lifesaving law.

### **U.S. Commission on Civil Rights**

NCAI requests support for the U.S. Commission on Civil Rights (Commission) funding of \$9.43 million in FY 2017. The Commission plays an important role in protecting and advancing the civil rights of American Indians and all people throughout the United States.

Defending the civil rights of American Indians/Alaska Natives remains a high priority as many forms of discrimination, personal as well as structural, continue to take place far too often. Indian Country faces efforts to dilute the voting strength of American Indians/Alaska Natives. Structural racism also affects the ability of tribal governments to address the public service needs of their citizens. For instance, tribal leaders have called for fairness in resources provided for tribal juvenile justice and justice systems throughout Indian Country. Structural racism also affects education funding and has led to crumbling school infrastructure that affects Native American students. NCAI supports enforcement of our nation's civil rights laws and the role of this Commission in that effort.

Due to our small population size and rural locations, the American Indian/Alaska Native population faces data quality and data availability obstacles. Many researchers call Indian Country the "asterisk nation" because an asterisk tends to be the only reference to America's first people in data sets and research. With often limited data, tribal nations continue to suffer what we consider a quiet crisis of unmet needs; the Commission has investigated and documented many disparities in ways that assist tribal leaders and policy-makers to develop solutions and target needs in Indian Country. NCAI encourages \$9.43 million to enable the Commission to conduct investigations, hold hearings and execute its responsibilities to the best of its abilities. These funds represent a small amount of money in the face of serious violations that stand to undermine the very freedoms and principles upon which our nation has been built.

### **Department of Commerce**

**Provide \$35 million for the Minority Business Development Agency (MBDA).** Established by Executive Order in 1971, the Minority Business Development Agency (MBDA) was created to support minority business development centers to provide business consulting and financing services. Initial funding for the MBDA was set at \$63 million but this budget has since decreased over 50 percent and the FY 2016 MBDA budget approved \$32 million. Funding the MBDA at \$35 million will assist tribes in obtaining vital business consulting, financing services, and procurement of technical assistance. Furthermore, Congress and the MBDA should establish a set-aside sufficient to reestablish Native American Business Enterprise Centers (NABECs) at each of its MBDA Business Centers (MBCs). These funds are critically important due to the service gap created by the elimination NABECs in 2011, which consolidated its cooperative assistance grants to MBCs. MBDA must be able to sustain and expand support for Native American businesses to develop stronger private sector capabilities and contribute to the national economy. MBDA should also continue to support efforts to pursue federal contracts, direct efforts to track minority business data, and collaborate with the Office of Native American Business Development.

**Fund the Office of Native American Affairs (ONNA) at a minimum of \$1.25 million as part of the Commerce Department Management Budget.** The establishment of the Office of Native American Business Development (ONABD) was codified by the enactment of the Native American Business Development, Trade Promotion and Tourism Act of 2000, Public Law 106-464 (the 2000 Act). However since its establishment, ONABD has relied on base resources from the Minority Business Development Agency (MBDA) to coordinate federal programs for financial and technical assistance to increase business, expand trade, and support economic development on tribal lands. In its FY 2016 budget request submitted to Congress MBDA noted the absence of appropriations to support ONABD since it was created by the 2000 Act, and also the lack of appropriation to implement other aspects of PL 106-464 and the Indian Tribal Regulatory Reform and Business Development Act of 2000. In order to carry out its mission, ONABD must receive adequate and sustained support to implement Indian policy initiatives and expand Native American business development initiatives both domestically and internationally. Funding made available through Commerce's Departmental Management budget would help ONAA's efforts, particularly given the reduced focus of MBDA on specific Native American business assistance. Supported ONABD functions would include serving as the economic development lead on Native American programs within the Department, coordination with other cabinet departments and agencies; conducting outreach to tribes, tribal enterprises and Native businesses; and business and financial management training.

## **Conclusion**

Thank you for your consideration of this testimony. For more information, please contact Virginia Davis, Senior Policy Advisor, at [vdavis@ncai.org](mailto:vdavis@ncai.org), NCAI Budget and Policy Analyst, at [aebarb@ncai.org](mailto:aebarb@ncai.org) or Brian Howard, Legislative Associate, at [bhoward@ncai.org](mailto:bhoward@ncai.org).



# SEARCH

The National Consortium  
for Justice Information and Statistics

BRAD TRUITT Chair

SCOTT M. CAME Executive Director

Testimony of: Scott Came, Executive Director, SEARCH, The National Consortium for Justice Information and Statistics  
Prepared for: The House Subcommittee on Commerce, Justice, Science and Related Agencies  
In re: U.S. Department of Justice, NCHIP and NARIP  
Date: March 18, 2016

## Introduction

Thank you, Mr. Chairman and members of the Subcommittee, for the opportunity to submit testimony on the Department of Justice (DOJ) funding to be provided for in the FY 2017 Commerce, Justice, Science, and Related Agencies appropriations bill. SEARCH recommends an appropriation of \$73 million for the National Criminal History Improvement Program (NCHIP) and the National Instant Criminal Background Check System (NICS) Act Record Improvement Program (NARIP), which is the amount that was included in the 2016 Consolidated Appropriations Act.

SEARCH, The National Consortium for Justice Information and Statistics (SEARCH), is a nonprofit membership organization created by and for the states. SEARCH's Governor-appointed, dues-paying Members from the states and territories have the responsibility, among other things, to oversee both NCHIP and NARIP within their states.

Over the years, states have made great strides in meeting their criminal history record improvement goals under both programs. The past two years of robust funding for these programs as reflected in the FY 2015 and FY 2016 Commerce, Justice, Science and Related Agencies appropriations was welcomed by the states who use the funding to modernize and enhance operations and technology, to more effectively share data for critical criminal justice and public safety decisions. NCHIP funding has helped states dramatically improve the quality and completeness of criminal history records, as well as make them electronically available nationwide. NARIP has vastly improved information available for firearms eligibility via the NICS system, including increasing mental health records available to NICS by nearly 1500%<sup>1</sup>.

There is still work to be done to realize a truly complete and accurate national criminal history background check system. That system not only informs a variety of critical public safety decisions, but also noncriminal justice decisions, such as those regarding applicants for employment and licensing; volunteers who work with children, elderly and other vulnerable populations; and individuals purchasing firearms. It is important to recognize that information stored in the states' criminal history record repositories and used for criminal justice decisionmaking (such as at arrest, filing of charges, sentencing, and inmate housing), is the same information required for other public safety and civil decisions (such as decisions about individuals applying for employment or volunteer work, and for firearms eligibility determinations).

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<sup>1</sup> <http://www.search.org/mental-health-records-in-nics-increase-1491-over-the-past-decade/>



The states are leveraging prior Congressional funding to engage in broad-scale initiatives and partnerships with other state agencies to improve and enhance criminal history record information collection and sharing. These partnerships between the criminal history repositories and the state courts, corrections, prosecution and mental health agencies – among others – have been encouraged through these substantive grant funding streams and mean enterprise solutions can be developed to common cross-agency information sharing challenges. They hope to continue this work with new funding in FY 2017.

SEARCH appreciates the Subcommittee’s recognition that while both NCHIP and NARIP each focus on improvements to the efficiency, effectiveness, timeliness and accuracy of criminal history record and associated data for decisionmaking purposes, each program emphasizes specific and distinct goals.

NCHIP allows states to focus on a broad range of criminal history improvement activities that are unique and specific to each state. States have identified and prioritized the improvements needed in their systems to support critical decisionmaking at the State and national level for both criminal and civil decisions. Some of those priorities include improving arrest records, increasing dispositions, increasing conviction record availability in the federal systems, and enhancing positive identification capabilities.

Maine, for example, has used NCHIP funding to locate missing criminal history record dispositions or fingerprint-supported records, specifically focusing on improving felony, sex offender and domestic violence records. Connecticut has used NCHIP funding to migrate paper criminal history record dispositions into a searchable electronic format to improve the overall efficiency in searching disposition records and reduce the disposition backlog. North Carolina has used NCHIP funding to identify and enter 74,000 mental health commitments into NICS. Washington State has used NCHIP funding to dramatically increase the number of dispositions in the state’s criminal history system. Like many other states, Georgia and Vermont have used NCHIP funding to become fully compliant with the National Fingerprint File, assuming ownership of its criminal history records, and maintaining the record as part of the FBI’s Interstate Identification Index.

The flexibility of NCHIP funding allows states to enhance enterprise information sharing and data use to support a myriad of key decisions in the justice arena each and every day. For example, the lack of positive, biometric identification associated with criminal history records is often a major challenge. Kentucky used FY 2015 funding to develop a Court Fingerprint Notification application within its E-Warrants system. When an offender appears before a judge, the judge will be automatically notified if the offender’s fingerprints are not on file, allowing the judge the ability to order that fingerprints be taken. South Carolina used NCHIP funding to improve the number and quality of palm prints it submits to the FBI for nationwide use.

In contrast to the NCHIP grant funding, NARIP funding focuses specifically on improving information sharing with NICS for firearms purchases. There are 10 categories established in Federal law that disqualify an individual from purchasing firearms. They include disqualifiers such as felony conviction information, fugitive from justice, domestic violence protection order, involuntary commitment to mental health institution, etc.

Nearly 90% of the records used to make these disqualifying decisions are based on the information that states provide to NICS.<sup>2</sup> That information comes from three key sources: the Interstate Identification Index (III - the national system for exchanging criminal record information), the National Crime Information center (NCIC – an automated, nationally accessible database of crime data, criminal justice and justice-related records, including wanted persons and protection orders) and the NICS Index (created for presale background checks of firearms purchase). Any efforts states undertake to improve the information contribution to any of these databases enhances the effectiveness of firearms eligibility decisionmaking.

NARIP grants allow states to improve information made available to NICS, such as increasing the number of disqualifying mental health records into the NICS Index and domestic violence orders of protection into the NCIC. Such targeted funding assists states meet challenges specifically associated with getting information to the system. However, NARIP funds are only available to 27 States at this point, as not all States qualify for the funding.<sup>3</sup>

Those States that do qualify can target information sharing efforts to improve their contributions to NICS. Kentucky officials, for example, have used funds to develop a capability to identify persons prohibited from firearms purchases due to fugitive from justice status and automatically transmit these records to the NICS Index.

In New York, NARIP grant funds have significantly improved the records that New York State makes available to the NICS Index. New York can now efficiently transmit records of mental health involuntary admissions and civil guardianships to NICS. The State also collects and reports Misdemeanor Crimes of Domestic Violence (MCDV) convictions to NICS so that vulnerable spouses, children and intimate partners are further protected. The State also completed significant system enhancements to improve the accuracy and completeness of disposition data made available to NICS via New York's Criminal History Reports.

In Florida, the State Department of Law Enforcement (FDLE) partnered with the clerks of court and law enforcement agencies to update missing court dispositions, arrest records, and historic civil mental health records which could result in domestic violence convictions and other firearm purchase disqualifiers. Over 1.8 million new dispositions have been added and more than 6.4 million records have been updated. In addition, 180,000 civil mental health records were added and are now available for NICS firearm purchase decisions.

SEARCH makes three key recommendations regarding NCHIP and NARIP funding:

**1. Support NCHIP funding for improvements to State criminal history record information to robustly support criminal and civil decisionmaking nationwide.**

The NCHIP program has been successful in helping states to improve the accuracy, reliability and completeness of their automated, criminal history record systems. Meaningful NCHIP

<sup>2</sup> FBI Criminal Justice Information Services III Statistics, February 1, 2013

<sup>3</sup> NARIP has two main requirements: States must 1) establish a process where those adjudicated as "mentally defective" can seek to reinstate their right to purchase a firearm, and 2) comply with a process to estimate the number of NICS disqualifying records they maintain. Only 27 states have met requirement #1.

funding will more broadly improve this nation's criminal justice information sharing backbone. And the federal investment can be leveraged many times over by contributing to the ability of state and local criminal justice agencies to provide timely, accurate and compatible information to federal programs such as III. Most importantly, all states qualify for funding under NCHIP.

NCHIP funding since FY 2014 has reinvigorated a program that had suffered in years past from considerably reduced funding. Because state criminal history records are the primary source for the FBI III database, any constraints on the states weakens the ability of many state and federal programs to identify threats and keep our nation safe.

## **2. Continue to invest in improving background screening for firearms purchases.**

We urge Congress to continue the investment in the Federal-State criminal background screening partnership that comprises NICS. NICS is a critical tool in the fight against gun violence, and the States and FBI rely on NICS every day for informed decision-making on firearms transactions.

There are still many opportunities for improving the timeliness and availability of information to NICS. There are still millions of records related to felony convictions, under indictment/information, fugitive from justice and drug abuser prohibiting categories that are not always available to NICS. States have made huge strides in making mental health records available to NICS. Many states would like to target information sharing in the other prohibitor categories to further improve their information sharing to NICS.

## **3. Provide an appropriation of \$73 million for NCHIP and NARIP.**

Providing level funding for NCHIP and NARIP in FY 2017 will allow states to utilize these programs to improve their criminal history records in support of general criminal justice and civil decisionmaking, as well as improvements to background screening for firearms purchases.

## **Conclusion**

SEARCH thanks the Chairman and members of the Subcommittee for their steadfast support of these programs in the face of daunting budget challenges. Given the reliance on criminal history record systems for critical decisions that keep our citizens safe from guns, predators, terrorists and other criminals, it is a worthwhile and needed investment. The accuracy, completeness and reliability of the nation's criminal history record system is more important than ever before, for criminal investigations; officer safety; sentencing and other criminal justice purposes; for expungement and other reentry strategies; for homeland security and anti-terrorism purposes; for public non-criminal justice purposes, such as security clearances and employment suitability; and for research that provides critical guidance in shaping law and policy.

As you can see from the examples above, for both of NICS and NCHIP, SEARCH encourages Congress to allow states to use funding at their discretion to address the specific challenges each state faces in making more records available to the national system.

On behalf of SEARCH's Governor-appointees, and the thousands of criminal justice officials who benefit from SEARCH's efforts, I thank you for your consideration.

# Sac and Fox Nation

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**Testimony Submitted by Honorable Kay Rhoads, Principal Chief  
Sac and Fox Nation  
Submitted to the House Appropriations Subcommittee on Commerce,  
Justice, Science and Related Agencies  
on the FY 2017 Budget for the Office of Justice Programs, Department of Justice  
March 31, 2016**

Chairman Shelby and distinguished Members of the Committee, I am Kay Rhoads, Principal Chief of the Great Sac and Fox Nation. The Sac and Fox Nation is home of Jim Thorpe, one of the most versatile athletes of modern sports who earned Olympic gold medals for the 1912 pentathlon and decathlon. Thank you for accepting this written testimony which presents to you our Tribal requests for funding programs in the Office of Justice Services, Department of Justice.

Congress has taken historic steps in recent years with the passage of the Tribal Law and Order Act (TLOA) in 2010 and the Violence Against Women Reauthorization Act of 2013 (VAWA 2013), both of which begin to address some of the structural barriers to public health and safety in Tribal communities. For the promise of these laws to be fully realized, they must be fully implemented, which requires sufficient resources for Tribal justice systems and ongoing coordination and consultation between various Federal agencies and Tribal governments. The public safety and justice needs of our communities should not be ignored and both of these bills should be funded to fulfill the intent of Congress.

The Sac and Fox Nation would like to advance the following Department of Justice budget requests for FY 2017:

- 1. Fully Fund the Tribal Law and Order Act**
- 2. Fully Fund All Tribal Provisions of the Violence Against Women Act**
- 3. Tribal Grants – Utilize DOJ Appropriations as Base Funding with Tribes Setting Own Priorities**
- 4. Tribal Set-Aside from All Discretionary Office of Justice Programs**

The Sac and Fox Nation also supports the appropriation requests of the National Congress of American Indians.

### **About the Sac and Fox Nation**

The Sac and Fox Nation is a Self-Governance Tribe headquartered in Stroud, Oklahoma. Our Tribal jurisdictional area covers Lincoln, Payne, and Pottawatomie counties. Of the 4,000 enrolled Tribal members, 2,600 live in Oklahoma. Our culture is based upon respect for the life within ourselves, our families, our communities, and all of creation. The Creator gave this way of life to the Sac and Fox people. The culture is the way things are done in relation to each other and all of creation. The Sac and Fox way of life is spiritually-based. We seek the guidance of the Creator in how to live. The oldest continuing religious practices are ceremonies like clan feasts, namings, adoptions, and burials. More recent religious practices include the Drum Dance, the Native American Church and Christianity.

### **Fully Fund Tribal Law and Order Act as Authorized**

The Tribal Law and Order Act (TLOA) has three basic purposes:

1. Make Federal departments and agencies more accountable for serving Native peoples and land;
2. Provide greater freedom for Indian Tribes and Nations to design and run their own justice systems; and,
3. Enhance cooperation among Tribal, Federal and State officials in key areas such as law enforcement, training, interoperability and access to criminal justice information

The Sac and Fox Nation operates a Juvenile Detention Center which provides services to 46 Tribes in Oklahoma, Kansas and Texas, as well as the state of Oklahoma. We are anxious to advance the opportunities that TLOA can offer to further expand and increase access to our facility. However, unless TLOA is fully funded, facilities such as ours will not be able to attain the full potential and help to guide children in the system towards a successful future.

The full potential of TLOA cannot be realized or implemented without sufficient resources for Tribal justice systems and ongoing coordination and consultation between Tribal governments and various Federal agencies. DOJ recognized the importance of completing the circle when it issued the "Proposed Statement of Principles", in which is referenced that a stable funding at sufficient levels for essential Tribal justice functions is critical to the long-term growth of Tribal institutions. Yet the act remains under funded.

**Fully Fund Violence Against Women Act as Authorized**

We applaud the work of Indian Country and Congress to successfully enact the reauthorization of the Violence Against Women Act (VAWA) that includes **all women** in Indian Country as of December 12, 2014. The exemption of Alaska was disheartening and unacceptable to exclude any Native woman equal access to justice. Thank you for helping us to protect our mothers, daughters, sisters and wives from jurisdictional gaps or safe havens for criminals. But without funding to implement the law, this is an idle victory. We urge you to fully fund all of the Tribal provisions of VAWA at the authorized amount.

With the implementation of the expanded jurisdiction arising from the Reauthorization of the Violence Against Women Act, Tribal Nations are meeting a budget crisis. At the Sac and Fox Nation, we have gone through the process of amending all of our laws dealing with this jurisdiction to ensure both compliance and fairness for all defendants. However, in order to ensure that overarching need, we have to be able to provide for a proper public defender to ensure that all defendants are getting the best representation possible. However, the funding provided to justice programs is at such a low level that we are prevented from having someone on staff to fill that role. This creates a problem of access and availability which must be corrected. Moreover, we also need to have the ability to jail persons who are convicted, especially those with long sentences due to multiple convictions or serious offenses. However, the funding levels for incarceration that are currently appropriated to Tribes are simply not enough to cover these costs. The Sac and Fox Nation is a prime example of this. We do not have our own facility to incarcerate convicted persons, or access to Bureau of Prisons facilities, and must send them to county jails which may cost us anywhere from \$33 - \$78 per day. At those rates incarcerating one person for a year would use a large majority of our incarceration budget. This makes it significantly harder for us to protect the women and children of the Sac and Fox Nation from violence. We ask that you seriously consider increasing the appropriations to support the changes that we are making for the future.

**Tribal Grants – Utilize DOJ Appropriations as Base Funding with Tribes Setting Own Priorities – Eliminate the competitive grant funding process and utilize Justice Department appropriations as base funding where Tribes and Tribal Courts themselves determine their own priorities.**

Competitive funding for Tribal priorities is a no win situation that continues to pit Tribe against Tribe. One of the biggest issues with DOJ funding is that it is competitive. In order to obtain the funding – Tribes must compete against each other based on DOJ's priorities and guidelines rather than identifying their own priorities to best serve their citizens at the local level.

Instead the approach should be to utilize DOJ appropriations as base funding so that Tribes are encouraged to determine their priorities. It appears that DOJ understands this concept inasmuch as it posed the idea of base funding in the form of a block grant during Tribal consultation on the Office of Violence Against Women (OVW). We propose that DOJ not merely propose this for OVW but consider this for all Tribal appropriations in the Department.

**Tribal Set-Aside (Seven Percent)** – Again we ask for a seven percent Tribal set-aside from all discretionary Office of Justice Programs program funding. Ensure that they are allocated as flexible base funding. The seven percent set-aside was cut in the passage of the FY 2012 Consolidated and Further Continuing Appropriations Act. As a result Tribal justice programs were cut across the board and continue to struggle to address the increasing need of these funds which were further impacted by the sequestration.

A majority of Tribal trust and treaty promises are funded in the domestic discretionary budget. In FY 2014, non-defense discretionary funding was nearly 18 percent below FY 2010 levels adjusted only for inflation as a result of cuts made in the FY 2011 appropriations process and the Budget Control Act, including sequestration. Tribes urged the appropriators to replace the sequestered funds and avoid cutting even more deeply from key domestic investments, which include the solemn duty to fund the trust responsibility. The Murray-Ryan budget agreement partially replaced sequestration but Tribal programs were not restored.

Congress and the Administration should enact an amendment to the Budget Control Act of 2011 to fully exempt Indian program funding from future sequestrations to honor the Federal trust responsibility and the chronic and severe underfunding of all Tribal programs.

This would be a show of good faith that "great nations like great men honor their word"!

Thank you.

# Sea Grant Association

Testimony of Dr. Sylvain De Guise  
 President, Sea Grant Association and  
 Director Connecticut Sea Grant  
 to the  
 Subcommittee on Commerce, Justice, and Science  
 Committee on Appropriations  
 House of Representatives  
 Washington, D.C.  
 March 25, 2016

This year marks the 50<sup>th</sup> anniversary of the National Sea Grant College Program. On behalf of the 33 Sea Grant programs in every coastal and Great Lake state, plus Puerto Rico and Guam, the Sea Grant Association (SGA) expresses its gratitude to the Congress for strong and consistent support it has provided year in and year out for the National Sea Grant College Program (Sea Grant). Sea Grant was created by the U.S. Congress in 1966 to be a highly leveraged federal and state partnership to harness the intellectual capacity of the nation's universities to solve ocean, coastal, Great Lakes and island (hereby referred to as coastal) problems. Sea Grant provides unique access to scientific expertise and to new discoveries. Through its scientists and communications, education, extension and legal specialists (hereby referred to as engagement professionals), Sea Grant generates, translates and delivers cutting-edge, unbiased, science-based information to address complex issues.

For the United States to be more responsive to the economic development potential of its coastal resources, improve coastal resilience, and balance the environmental challenges its coastal communities face, *the Sea Grant Association is requesting federal funding of \$80 million in FY2017 for the research, education, and extension activities that make up the National Sea Grant College Program. This recommended funding level would support the key focus areas in the program's strategic plan: healthy coastal ecosystems; sustainable fisheries and aquaculture; resilient communities and economies; environmental literacy and workforce development.*

**The National Sea Grant College Program contributions to the economic health of the nation's coastal communities** — In 2014, the Sea Grant program delivered the following benefits to the nation as a result of its activities:

- \$450 million in economic development;
- 6,500 businesses created or retained;
- 17,500 jobs created or retained;
- 290,000 volunteer hours for outreach;
- 760 undergraduate students supported;
- 980 graduate students supported;
- 53,000 stakeholders modify practices based on information and technical assistance provided by Sea Grant;
- 220 communities implement new sustainable practices; and
- 21,700 acres of ecosystems restored.



# *Sea Grant Association*

**The Importance of the Nation's Coastal Communities** — Sea Grant is NOAA's federal-state partnership program that supports science-based, environmentally sustainable practices to ensure our coastal communities remain engines of economic growth in a rapidly changing world. More than half of the United States population lives in coastal counties that generate 58% (\$8.3 trillion) of the Nation's gross domestic product (GDP). In 2011, Americans, on average, ate 15 pounds of fish and shellfish per person — 4.7 billion pounds all together — making the U.S. second in the world in total seafood consumption. Offshore oil production in the U. S. Exclusive Economic Zone accounts for 24% of the total U.S. crude oil production. If American coastal watershed counties collectively comprised a single country, that country would have a GDP higher than that of China. The United States has jurisdiction over 3.4 million square miles of oceans — an expanse greater than the land area of all 50 states combined. This is a dynamic area that offers a mosaic of biologically diverse habitats that provide a wealth of environmental resources and economic opportunities, while at the same exposing human and biological communities to hazards such as damaging tsunamis and hurricanes, industrial accidents and outbreaks of water borne pathogens. Sea Grant's portfolio touches on all of these issues in meaningful ways helping those who live, work and recreate on our nations' coast to prosper.

Serious challenges present the greatest opportunities for change, and Sea Grant is prepared not only to respond, but to help coastal communities prepare to meet these challenges. One of Sea Grant's demonstrated strengths is its ability to quickly mobilize universities and other partners to address challenges across the country and around the world. The national Sea Grant network of university scientists and communication, education, extension and legal professionals has the ability, through the organization's coordinated state and regional infrastructure, to address local and state priorities of national importance. At this time of great risk to the sustainability of our ocean, coastal and Great Lakes resources, there is an even greater opportunity for the Sea Grant network to play a significant role, through innovation and creativity, in addressing the goals set forth in this plan. The Sea Grant programs will strive to achieve these national goals in a manner that reflects the particular needs of individual states and communities and the nation as a whole.

The National Sea Grant College Program envisions a future where people live, work and play along our coasts in harmony with the natural resources that attract and sustain them. This is a vision of coastal America where we use our natural resources in ways that capture the economic, environmental and cultural benefits they offer, while preserving their quality and abundance for future generations. This vision complements the vision articulated in NOAA's Strategic Plan: "Healthy ecosystems, communities and economies that are resilient in the face of change." Sea Grant's mission is to provide integrated research, communication, education, extension and legal programs to coastal communities that lead to the responsible use of the nation's ocean, coastal and Great Lakes resources through informed personal, policy and management decisions.

Sea Grant is a national network. This network includes the National Sea Grant Office, 33 university-based state programs, the National Sea Grant Advisory Board, the National Sea Grant Law Center, the National Sea Grant Library and hundreds of participating institutions. The Sea Grant network enables NOAA and the nation to tap the best science, technology and expertise to balance human and environmental needs in coastal communities. Sea Grant's alliance with major research universities around the country provides access to

# Sea Grant Association

thousands of scientists, students and engagement professionals. Sea Grant's university-based programs are fundamental to the development of the future scientists and resource managers needed to conduct research and to guide the responsible use and conservation of our nation's coastal resources. With its strong research capabilities, local knowledge and on-the-ground workforce, Sea Grant provides an effective national network of unmatched ability to rapidly identify and capitalize on opportunities and to generate timely, practical solutions to real problems in real places. Since its creation, the National Sea Grant College Program has been at the forefront of addressing economic opportunities and environmental issues facing coastal communities through its research and outreach efforts. Sea Grant is user-driven and university-based, and it is fully and actively engaged with regional, state, and local organizations. Sea Grant helps America use its coastal resources wisely in order to sustain the health and productivity of coastal communities.

## Sea Grant in Action in Local Communities

**Mississippi-Alabama Sea Grant** research and outreach leads to development of commercial off-bottom oyster farming industry in Alabama that approaches \$1,000,000 per year. The Gulf Coast oyster industry has suffered a number of setbacks, both natural and manmade, that are challenging an industry built around inexpensive, plentiful oysters. Off-bottom oyster farming for the high-value, half-shell niche market, as practiced on the northeast and Pacific coasts, provides an opportunity for Gulf residents to create jobs, increase profits and diversify the oyster industry. Sea Grant-funded scientists established two large oyster farming parks that serve as platforms for training and business development, as part of a partnership between Louisiana Sea Grant, the Mississippi-Alabama Sea Grant Consortium (MASGC), Auburn University, and Louisiana State University. The parks demonstrate grow-out and harvesting technology and techniques. Scientists also provided technical advice and evaluations of possible sites to potential oyster farmers. Along with scientists, Sea Grant legal specialists were integral in providing research to inform passage of state legislation that clarified and simplified the permitting process. Nine new commercial oyster farms have been established in Alabama, with a total farm-gate value exceeding \$825,000 to date, which is expected to more than double in 2015, increasing incomes and generation of local jobs (at least 6 full-time positions and over 10 part-time positions). At least 5 wholesalers in Alabama also profited from the sales of these oysters. Two new oyster equipment companies were established in Alabama, with total sales inception well over \$100,000. Several applications for new commercial farms are pending the results of the governor's review board mandated by Alabama HB 361. This work has also led the Gulf Oyster Industry Council to appoint a technical advisor on oyster farming since 2012. In partnership with Organized Seafood Association of Alabama (OSAA), MASGC has conducted a hands-on training program Oyster Farming Fundamentals, which has trained 16 adult students that have collectively raised 350,000 oyster seed, and developing a "vo-tech" program that trains high school students to be oyster farmers.

**Wisconsin Sea Grant** -- Sea Grant recognizes the vital nature of its engagement within collaborative NOAA activities. Such efforts not only broaden Wisconsin's experiences and learning opportunities but also allow Wisconsin staff to contribute to a stronger focus when addressing national and regional marine challenges to ensure sustainable use. One such rich partnership is with the Lake Superior National Estuarine Research Reserve. In 2010, the Lake Superior National Estuarine Research Reserve was dedicated. It was the culmination of several years of involvement by Wisconsin Sea Grant to bring this fellow NOAA program to

### 3

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# Sea Grant Association

the state. Sea Grant staff had contributed to the scoping study, participated in the site selection, currently serve on the advisory board and has co-located three staff members in the LS-NERR facility in Superior, Wis. In total, these efforts have led to important collaborative work, including assistance with an annual science summit; a science speaker series; and Sea Grant funding for specific joint research projects. The joint research is also being funded through yet another NOAA partnership, with Minnesota Sea Grant.

Florida's \$3 Million commercial sponge fishery employed traditional harvesting practices that impaired the ability of sponges to regrow, making the industry unsustainable. **Florida Sea Grant** agent, John Stevely, an internationally recognized sponge expert, developed a new harvesting protocol (one that harvests sponges by cutting rather than hooking) that allows the sponges to regenerate. This method is now used by the industry to harvest sponges sustainably. Areas that had been traditionally closed to sponge harvesting have been reopened following Florida Sea Grant research that showed current harvesting methods are sustainable. It is estimated that Florida Sea Grant's recommended approach to sponge harvesting has resulted in the retention of 150 jobs and \$3 million in annual earnings to the Florida commercial sponge industry. Jim Cantonis, President of ACME Sponge and Chamnios, Tarpon Springs, FL, commented that "If it was not for Florida Sea Grant, there would be no commercial sponge industry in Florida."

**Sea Grant's role in STEM Education** – The Sea Grant program provides an important mechanism that delivers high quality, stimulating STEM education to students using the oceans and coasts or the Great Lakes, as the exciting vehicle for conveying important scientific and natural resource concepts. The support that Sea Grant provides is an important catalyst and helps create important educational partnerships in coastal communities. We urge the Subcommittee to continue to support Sea Grant STEM activities in the FY17 Commerce, Justice and Science Appropriations bill.

**Sea Grant – A Cost Effective Investment in Coastal Communities** – Approximately 95 percent of the federal funding provided to Sea Grant leaves Washington D.C. and goes to the state programs where it is used to conduct research, carry out extension and outreach activities, and deliver valuable services to the nation. Moreover, federal funding through the Sea Grant program has a significant leveraging impact with *every two federal dollars invested attracting at least an additional dollar in mandatory non-federal resources in matching funding, in addition to the additional funds and resources leveraged through extensive partnerships.* With \$80 million in federal funding for FY 2017, Sea Grant will leverage an additional \$40 million to \$80 million in state and local support, continue to increase the economic development and resiliency of our coastal communities, contribute to STEM education in our communities, and help sustain the health and productivity of the ecosystems on which they depend. The National Sea Grant College Program is one of the very few nationally competitive grant programs that can demonstrate this kind of real impact at the local, state, and national levels. The Sea Grant Association is grateful to the Subcommittee for the opportunity to provide this information.

**Jeff Watters, Director, Government Relations, Ocean Conservancy**  
**Testimony for the Subcommittee on Commerce, Justice, Science and Related Agencies**  
**FY 2017 Appropriations for the National Oceanic and Atmospheric Administration**

Thank you for this opportunity to provide Ocean Conservancy's recommendations for FY 2017 funding for NOAA. Ocean Conservancy has worked for over 40 years to address threats to the ocean through sound, practical policies that protect our ocean and improve our lives. We support funding for NOAA at or above the President's Request of \$5.8 billion, and we support balanced investments across NOAA's atmospheric and oceanic missions. We recommend the following funding levels for specific programs.

<b>Account, Program or Activity</b>	<b>FY 2016 enacted</b>	<b>FY 2017 PB request</b>	<b>FY 2017 OC request</b>
<b>Operations Research and Facilities</b>			
<i>National Ocean Service</i>			
Coastal Science and Assessment			
Marine Debris	\$6 m	\$6 m	\$8 m
Ocean and Coastal Mgmt. and Services			
Coastal Management Grants: Regional Coastal Resilience Grants	\$5 m	\$20 m	\$20 m
<i>National Oceans and Coastal Security Fund</i>	--	\$10 m	\$10 m
<i>National Marine Fisheries Service</i>			
Marine Mammals, Sea Turtles, & Other Species	\$110.246 m	\$125.107 m	\$125.107 m
Fisheries Data Collections, Surveys and Assessments	\$163.271 m	\$164.749 m	\$164.749 m
<i>Office of Oceanic and Atmospheric Research</i>			
Regional Climate Data and Information	\$38 m	\$52.703 m	\$52.703 m
NOAA Arctic Research Program	--	\$4.255 m increase	\$4.255 m increase
Climate Competitive Research	\$60 m	\$66.250 m	\$66.250 m
Impacts of Climate on Fish Stocks	--	\$5.83 m increase	\$5.83 m increase
Integrated Ocean Acidification	\$10 m	\$21.775 m	\$30 m
<i>Office of Marine and Aviation Operations</i>			
Marine Operations & Maintenance	\$178.838 m	\$184.376 m	\$184.376 m

### **Marine Debris: \$8 million**

Marine debris, particularly plastic waste pollution, has become one of the most widespread pollution problems facing the world's oceans and waterways. It has serious effects on the marine environment and the economy, causing impacts from wildlife entanglement, ingestion and ghost fishing to navigational hazards and vessel damage. To address this growing problem, NOAA's Marine Debris program conducts reduction, prevention, and research activities through grants and engaging in strategic partnerships. The program is authorized at \$10 million and was funded at \$6 million in FY2016. More research is needed in four critical areas (the sources of plastic waste in the ocean, their distribution, the fates of those materials, as well as their impacts) to support data-driven policy solutions to prevent plastic from entering the environment. We support an increase in funding to \$8 million in order to meet these urgent research needs.

### **Regional Coastal Resilience Grants: \$20 million**

The resilience of our coastal communities is a critical mission for NOAA and the National Ocean Service. Resilient means more than just storm-ready. Truly resilient communities are able to effectively adapt to changing economic, social, and environmental conditions over time and effectively respond to new challenges and threats to infrastructure, community well-being, and ecosystem health. Comprehensive resilience for coastal communities and economies can only be achieved at the regional level when communities, states, and federal agencies come together to share their collective knowledge and establish a unified direction. Regions must evaluate a range of changing ocean conditions such as chemistry and ecology, sea level rise and coastal inundation, weather hazard risks, new ocean uses, and increasing use conflicts. Competitive Regional Coastal Resilience Grants from NOAA support work to address these regional challenges, ensuring that ocean priorities are set with fine-resolution, localized data to enable regional, state, and local implementation of resilience actions. We support an increase in funding to \$20 million in order to meet significant demand for these grants, as demonstrated by more than \$150 million in grant applications last year.

### **National Oceans and Coastal Security Fund: \$10 million**

When the FY2016 Omnibus Appropriations Act passed in December, it established the National Oceans and Coastal Security Fund (NOCSF). This fund at the National Fish and Wildlife Foundation is to be jointly managed with NOAA. Dollars that flow through the fund will be spent on research and activities to better understand and utilize ocean and coastal resources and coastal infrastructure. This type of fund was first conceived in 2004 by the U.S. Commission on Ocean Policy. After ten years of advocating for such a fund, Ocean Conservancy and others in the ocean community are pleased and relieved to finally see it created. We support the request in NOAA's budget for \$10 million to capitalize the NOCSF so this program can begin its important work.

### **Gulf of Mexico Restoration**

Restoration of the Gulf of Mexico in the wake of the BP *Deepwater Horizon* oil disaster and years of environmental stressors is only in its early stages. It is critical that NOAA's expertise be deployed effectively to support and carry out restoration efforts. We support the following funding in NOAA's budget to ensure the success of Gulf restoration through the RESTORE Act and the Natural Resource Damage Act:

- **Funding for NOAA's Restoration Center as needed**

NOAA's Restoration Center is providing key coordination and expertise to government-wide restoration efforts. For example, it is clear that the Restoration Center will serve as a center of gravity for the Open Ocean Trustee Implementation Group. In order to effectively lead this effort, the Restoration Center must be sufficiently resourced and it must also have the support and services needed from other parts of NOAA.

- **Marine Mammals, Sea Turtles and Other Species: \$125.107 million**

NOAA's work to protect living marine resources is important nationwide, but is especially critical in the Gulf region. We support the requested \$13.452 million increase for Marine Mammals in particular because it will support increased capacity for restoration efforts in the Gulf region. In addition, we support continued funding for the John H. Prescott Marine Mammal Rescue Assistance Grant Program, which funds the first responders for sick or dying marine mammals.

### **Fisheries Science and Management**

We support funding for programs that implement the *Magnuson-Stevens Fishery Conservation and Management Act*. As we review the Act for reauthorization, it is important to note that the Act is working – NOAA has made great strides towards ending overfishing and continued investments in these programs are needed. In particular, we support the following:

- **Fisheries Data Collections, Surveys and Assessments: \$164.749 million**

This recently consolidated line supports a host of activities critical to MSA implementation. For example, it provides resources for fisheries managers to assess priority fish stocks, implement the requirement for annual catch limits (ACLs), and ensure the successful recovery of overfished populations. Stock assessments give fishery managers greater confidence that their ACLs will avoid overfishing while providing optimal fishing opportunities. We also support funding for the Marine Recreational Information Program. Despite their often sizeable economic and biological impacts, much less data are collected from recreational saltwater fisheries than commercial fisheries due to the sheer number of participants and limited sampling of anglers' catches. The low level of data collection and lack of timely reporting of data in these fisheries is a large source of uncertainty and has become a flashpoint for controversy in regions where catch restrictions have been adopted to rebuild overfished stocks, particularly in the Southeast. By all accounts, improved sampling and timelier reporting of catch data are needed for successful management of marine recreational fisheries.

- **Electronic Monitoring and Reporting**

We support funding for electronic monitoring and reporting for nationwide efforts. In particular we support funding that goes to the Gulf of Mexico region, where managers need electronic monitoring to keep track of catch and prevent overruns in the red snapper fishery, there is significant need for additional funding. Based on the findings of the November 2014 "Technical Subcommittee Report to the South Atlantic and Gulf of Mexico Fishery Management Councils: Recommendations for Electronic Logbook Reporting" NOAA's requested increases are only a portion of what is needed to support effective electronic monitoring. The Gulf of Mexico region alone will require more than \$5 million annually to support electronic monitoring.

- **Impacts of Climate on Fish Stocks: \$5.83 million increase**

We support NOAA's request for increased funding in the Office of Oceanic and Atmospheric research to provide research grants that will provide new information and solutions to increasing challenges as important fisheries face a changing ocean due to climate change.

- **Marine Operations and Maintenance: \$184.376 million**

Marine Operations and Maintenance should be funded at or above the President's Request level of \$178.838 million. Days at sea funded by this line are functionally tied to fishery stock assessments, and the two programs must be viewed together.

**Integrated Ocean Acidification: \$30 million**

In recent years, scientists have raised the alarm about ocean acidification – a process whereby ocean waters' absorption of carbon dioxide emissions alters marine acidity. These changes can have far-reaching consequences for marine life, including economically important species like shellfish. For example, the shellfish industry in the Pacific Northwest has been devastated in recent years as increasingly acidic water impacted oyster hatcheries, nearly wiping out several years-worth of oyster "seed."

Given the magnitude of the potential impacts of ocean acidification we believe this area warrants not the increased research investment proposed in the President's FY2017 request (\$21.775 million), but rather the higher \$30 million proposed in FY2016. We greatly appreciate last year's appropriation of \$10 million for FY16, and believe the increase in funding is critical to allow NOAA to do more than just keep existing programs running and continue assessing acidification effects on commercial and recreational marine species. With additional funding NOAA can improve and expand regional ocean acidification experimental facilities and take on additional projects, like developing synthesis and visualization products that stakeholders are asking for. By increasing the programmatic funding for Integrated Ocean Acidification, NOAA will be able to take these concrete actions to more effectively tackle the economic and local implications of ocean acidification and prepare for future strategies that will protect our nation's key ocean and coastal economies.

**NOAA Arctic Research Program: \$4.255 million increase**

We support NOAA's request to make investments we need now to be prepared for economic and ecological challenges of a changing Arctic. Ocean Conservancy supported NOAA's requested increases for Arctic programs last fiscal year as well, but only a portion of the additional funding requested for the Arctic was appropriated. Considering the ongoing U.S. chairmanship of the Arctic Council, it is even more important now that investments be made to demonstrate U.S. leadership in the Arctic. Temperatures in the Arctic are warming at twice the rate of the global average and seasonal sea ice is diminishing rapidly. Funding to expand and improve NOAA's Arctic Observing Network is critical to track and understand these profound changes and provide products that inform industries and decision-makers and support our ability to adapt.

Testimony Regarding Fiscal Year 2017 Funding for  
 Federal Geoscience and Technology Programs  
 Submitted to the  
 Subcommittee on Commerce, Justice, Science and Related Agencies  
 Committee on Appropriations,  
 United States House of Representatives  
 by  
 Michael Thompson, Interim President  
 University Corporation for Atmospheric Research  
 March 25, 2016

On behalf of the University Corporation for Atmospheric Research (UCAR), I am pleased to submit this testimony to the House Appropriations Subcommittee on Commerce, Justice, Science and Related Agencies supporting the FY 2017 President's request for the vital research programs of NSF, NOAA, and NASA – with particular emphasis on the geosciences portfolio within their programs. These essential research agencies fund atmospheric and related science in hundreds of universities across the country, benefitting from the knowledge, expertise and innovation of our academic institutions.

UCAR is a consortium of over 100 research institutions, including 77 doctoral degree granting universities, which manages and operates the National Center for Atmospheric Research (NCAR) on behalf of the National Science Foundation (NSF). UCAR is proud to collaborate with and enhance the capabilities of our member universities and federal partners so that they can carry out important research and meet mission responsibilities on behalf of the American public.

### **The Importance of Our Research Investments**

UCAR has worked to elevate the understanding of, and support for, the atmospheric sciences nationwide. The atmospheric science departments at our member institutions are drivers of innovation and the fundamental scientific research that has pushed our understanding of weather, climate, space weather, atmosphere, and their interplay, into exciting and groundbreaking new areas. These advances have improved our ability to predict and understand some of the most dangerous phenomena that occur on our planet every day. Protection of life and property are the central drivers of this scientific innovation and discovery. However, more broadly, these innovations play a significant role in protecting our national security, our homeland, our businesses, our infrastructure and most importantly, our families and communities. As demand for information, prediction, and mitigation increase nationally and across the globe, it is the collaborative and exhaustive research being conducted in our universities and research laboratories that will answer this call and make our families, communities, businesses, and infrastructure better equipped and prepared to meet the challenges and dangers of living inside Earth's dynamic atmosphere.

The return on investments in the atmospheric sciences exemplifies how federal R&D drives economic growth. The commercial weather industry leverages U.S. investments in weather observation, atmospheric research, and computer modeling to produce tailored products for a



wide variety of clients, including the general public. There are now more than 350 commercial weather companies in the U.S., generating nearly \$3 billion in annual revenues. The growth rate of this industry is estimated to be about 10 percent per year. The vast majority of these innovations and technological advances are products of our academic institutions. Researchers, graduate students, and investigators at our universities are an astounding and innovative resource that, in light of the linkage between innovation and our economy, should be seen for what they are - our most valuable national asset. Across the country there is groundbreaking atmospheric science being done that will power our economy, save lives, protect our citizens, and impact every single American in a profound way.

### **Key Programs at NSF, NOAA, and NASA**

Within NSF, NOAA, and NASA, there are a number of specific initiatives we call to the Subcommittee's attention and ask for your strong support for these initiatives:

- NSF's geoscience directorate, its division of atmospheric and geospace sciences; and the National Center for Atmospheric Research (NCAR);
- Key NOAA programs including the Airborne Phased Array Radar program (APAR), the new Research Transition Acceleration Program (RTAP), and the Constellation Observing System for Meteorology, Ionosphere, and Climate – 2 (COSMIC) and its ground station; and
- NASA earth sciences and heliophysics research programs.

National Center for Atmospheric Research (NCAR) – NCAR, NSF's only Federally Funded Research and Development Center in the geosciences, has an exceptional record of leadership, scientific achievement and effective translation of scientific advances into useful knowledge for a nation that is highly impacted by atmospheric events that are sometimes catastrophic. Yet despite a 10% increase in NSF appropriations since FY 2011, NSF base support for NCAR has remained essentially flat. There is real and growing concern by the UCAR Board of Trustees that at the current funding levels, NCAR will be unable to support critical new scientific priorities while maintaining existing national scientific capabilities; such as the expanded computing facility operating in Wyoming or the High-performance Instrumented Airborne Platform for Environmental Research (HIAPER). These are examples of newly established capabilities resulting from prior appropriations provided by this subcommittee now under stress due to shortfalls in NCAR base funding. NCAR is an essential part of the research capabilities needed by the atmospheric and geospace sciences community. Accordingly, we request that you support the NSF's request for the atmospheric and geospace sciences division (\$268 million) and NCAR base funding of \$105 million -- a level that will help support current operating and staffing costs.

Airborne Phased Array Radar (APAR) -- The proposed NOAA investment of \$4.6 million in the APAR program will enable research and development of advanced methods of aircraft-based hazardous weather observation, which provide critical information about severe, tropical and heavy precipitation storms, for more accurate public warnings and forecasts. Airborne Doppler radar measurements provide critical location and intensity information about these storms, especially over open ocean or rugged terrain, where other radar information does not exist. Forecasters around the world utilize these radar observations, combined with satellite data and

other environmental observations, to study storms and generate predictions of storm intensity and direction. However, NOAA cannot fully take advantage of current technology due to mounting restrictions on aircrafts. Therefore, this proposed investment will initially focus on the research and development of an airborne radar system which can be utilized on a NOAA aircraft, and will provide more data, more accurately. Requested funding will be used to examine the potential benefits of APAR for providing the real time data needed for National Weather Service (NWS) forecasts and warnings and to determine how APAR's additional, advanced capabilities can improve forecasts in the future. NOAA Research will work with the research community to initially develop and demonstrate APAR's feasibility for collecting airborne radar measurements in hazardous weather environments, including hurricanes and severe local storms. Additionally, NOAA and its partners will use these measurements to conduct research to understand severe storms and improve NOAA's predictions and warnings for the public. Through this effort, future opportunities to develop and test other airborne observing systems, besides radar, will emerge and ensure that NOAA has the best airborne observing platform for hazardous weather events.

Research Transition Acceleration Program (RTAP) – In FY 2017 NOAA proposes to establish a \$10 million program to ensure continuous development and transition of the latest scientific and technological advances to National Weather Service (NWS) Operations. Through the RTAP proposal NOAA seeks to establish a broad program that accelerates the transition of the most promising research for the full spectrum of NOAA's mission requirements (e.g., weather, climate, fisheries management, ocean and coastal stewardship) to application and operations. The rapid transition of research projects to mission-driven applications, operational services, and commercialization is essential to achieve full return on NOAA's Research and Development (R&D) investment and to advance NOAA core missions. Numerous research projects with significant potential to benefit society are ready for rapid transition, but require increased resources for demonstration in relevant test environments, evaluation for commercial potential, and possible patent protection. This program will increase the number of demonstration-ready research activities for application and deployment to NOAA's diverse mission areas and for delivery to external partners and stakeholders. Funding will allow NOAA to accelerate the movement of transition ready projects through the demonstration and test phase of R&D and/or commercial application.

Constellation Observing System for Meteorology, Ionosphere, and Climate (COSMIC) - COSMIC is a six-satellite constellation that was launched to the polar orbit in 2006 in a joint collaboration between Taiwan, National Science Foundation, NASA, United States Air Force (USAF), and University Corporation for Atmospheric Research (UCAR). It was a research effort to explore a new, inexpensive atmospheric sounding technique, GNSS RO, to obtain global atmospheric temperature profiles, which were not available globally from other sources. The results of the research were so positive that NOAA started using GNSS RO data operationally. GNSS RO has been proven to be a cost-effective means of increasing the volume of quality global atmospheric soundings, providing temperature, water vapor, and pressure profiles, which result in more accurate long-range weather forecasts. The COSMIC design life was reached in April 2011.

COSMIC-2 is a continuation of the partnership between the United States (NOAA and USAF) and Taiwan to produce an operational constellation of GNSS RO satellites. The USAF is providing six RO sensors to be launched in low-inclination (equatorial) orbit, known as COSMIC- 2A. Taiwan will procure and operate the spacecraft for the GNSS RO satellites. NOAA will provide the ground reception system for processing data from the GNSS RO satellites. NOAA intends to leverage this ground system to acquire other RO data where possible whether from other governmental organizations or commercial operators. NOAA has requested \$8.1 million for ground reception and processing of GNSS RO satellite data. UCAR strongly supports this request. With this funding NOAA intends to complete all information technology security testing and verification in preparation for COSMIC-2 launches. Also, UCAR processing functions will be tested and certified by the National Centers for Environmental Prediction. This level of funding will support the operational testing and validation of the Numerical Weather Prediction models for COSMIC-2.

NASA Earth Science -- UCAR requests full funding of the Earth Science Division, per the President's request. This amount ensures exciting projects such as the Surface Water and Ocean Topography (SWOT) mission, which will conduct the first-ever global survey of Earth's surface water. Data from the satellite has promising uses for flood and drought management at local, regional, and national levels; improved risk assessments by the insurance industry; harnessing ocean energy opportunities; and optimizing the efficiency and effectiveness of both military and commercial marine operations. Strong funding for NASA Earth Sciences will also support the launch of Landsat 9 and 10 in a timely manner, which will provide manifest benefits to municipalities, corporations, and the general public in land-use planning.

NASA Heliophysics -- UCAR requests full funding of the Heliophysics Science Division, per the President's request. This amount ensures strong research in the study of the sun and its impact on the Earth. In 1859, a large Coronal Mass Ejection (CME) - known as the Carrington Event - sent charged plasma to the Earth from the sun, causing widespread failure of the telegraph system. Recently smaller events caused localized disruptions in telecommunications and electricity grid systems, which negatively impacted industry and military activities, as well as the daily lives of American citizens. Because of societal reliance on space-based assets, as well as the electricity grid, and a number of other systems vulnerable to extreme space weather, the economic impact of another Carrington Event to the United States alone is \$2.6 trillion. As such, we must improve our ability to understand and predict space weather to mitigate the risks and costs associated with future threats. Strong funding for the Heliophysics Division would enable NASA to fully participate in the cross-agency Space Weather Action Plan that will enable the United States to better understand, prepare for, and respond to space weather.

### **Concluding Thoughts**

We recognize the constraints the Subcommittee must confront in developing its FY 2017 appropriations bill. We hope you will see the investment in the research programs of NSF, NOAA, and NASA as essential priority investments that will contribute to the Nation's economic and national security as well as public safety. Thank you for the opportunity to submit these views.

## Consortium of Marine Mammal Stranding Networks

March 18, 2016

The Honorable John Culberson  
Chairman  
Commerce, Justice, Science and  
Related Agencies  
House Appropriations Committee  
H-310, The Capitol

The Honorable Michael Honda  
Ranking Member  
Commerce, Justice, Science and  
Related Agencies  
House Appropriations Committee  
1016 Longworth House Office Building

Dear Chairman Culberson and Ranking Member Honda,

As you begin work on the Commerce, Justice, Science and Related Agencies appropriations bill for fiscal year (FY) 2017, we respectfully urge you to fund the John H. Prescott Marine Mammal Rescue Assistance Grant Program at the original level enacted in 2001, \$4 million. While the President's FY 2017 budget would maintain funding for the Prescott Grant Program at the \$3 million set in FY 2016, the increasing workload and costs of operations for non-federal partners will far exceed this level, leaving the National Oceanic and Atmospheric Administration (NOAA) unable to meet its legal obligations under the Marine Mammal Protection Act to aid in the recovery and treatment of stranded marine mammals and facilitate the collection and dissemination of reference data on stranded marine mammals.

In 2000, the Marine Mammal Rescue Assistance Act established the Prescott Grant Program as the sole source of federal funding for the National Marine Mammal Stranding Network. This grant program provides critical support to eligible organizations to: 1) improve the rescue, care, and treatment of stranded marine mammals; 2) reduce the health risks posed to humans, other animals, and the ocean environment; 3) collect life history, biological, and biomedical data; 4) develop baseline reference data on the health of wild marine mammal populations; and 5) refine and/or utilize comprehensive and consistent guidance for the rescue and rehabilitation of stranded marine mammals. These competitive grants are only awarded if non-federal matching funds are also committed and no single award may exceed \$100,000. Since the first awards made in 2001, 552 grants have been awarded totaling over \$48M. The non-federal funding match required in this grant program has leveraged almost \$16M in private funding to aid partner organizations in meeting the NOAA mandate.

In the past year, Prescott grant awards have helped stranding network organizations respond to 8375 stranded animals, including those associated with a die off of bottlenose dolphins on the east coast (1827 animals from 2013-2015) and an unprecedented mortality event involving California sea lions on the west coast (3340 animals) - both of which continue to have impacts on human communities. Consistent stranding response aids in identifying changes in the marine ecosystem, often reflecting environmental conditions responsible for fluctuations in fish abundance and distribution thus affecting commercial catches. Stranding data collection also aids in identifying human health threats caused by toxic algal blooms and emerging zoonotic diseases.

Over the past 15 years, the Prescott Grant Program has helped to generate critical information about specific threats to marine mammals and their environment, which provides significant conservation and socioeconomic benefits to coastal communities nationwide.

### Consortium of Marine Mammal Stranding Networks

We look forward to working with you in support of this indispensable program and we thank you for your consideration of our request.

Sincerely,

Gary Freitag	University of Alaska	Ketchikan, AK
Tara Riemer	Alaska SeaLife Center	Seward, AK
Michelle Berman	Channel Islands Cetacean Research Unit	Santa Barbara, CA
Jeff Boehm	The Marine Mammal Center	Sausalito, CA
Dave Casper	UCSC-Long Marine Laboratory	Santa Cruz, CA
Jim Dines	Natural History Museum of Los Angeles County	Los Angeles, CA
Maureen Flannery	California Academy of Sciences	San Francisco, CA
Dawn Goley	Humboldt State Marine Mammal Stranding Program	Arcata, CA
Jeff Hall	California Wildlife Center	Malibu, CA
Dorian Houser	National Marine Mammal Foundation	San Diego, CA
James O. Lloyd-Smith	University of California, Los Angeles	Los Angeles, CA
Keith Matassa	Pacific Marine Mammal Center	Laguna Beach, CA
Pamela Yochem	Hubbs-SeaWorld Research Institute	San Diego, CA
Suzanne Thurman	Marine Education, Research & Rehabilitation Institute, Inc.	Lewes, DE
Mike Hurst	Clearwater Marine Aquarium	Clearwater, FL
Gretchen Lovewell	Mote Marine Laboratory	Sarasota, FL
Wendy Noke Durden	Hubbs-SeaWorld Research Institute	Melbourne Beach, FL
Megan Stolen	Hubbs-SeaWorld Research Institute	Melbourne Beach, FL
Kristi West	Hawaii Pacific University	Honolulu, HI
Renata Allelujka	Chicago Zoological Society	Brookfield, Illinois
Connie Merigo	New England Aquarium	Boston, MA
Katie Moore	International Fund for Animal Welfare	Yarmouth Port, MA
Kathy Zagzebski	National Marine Life Center	Buzzards Bay, MA
Brent Whitaker	National Aquarium	Baltimore, MD
Sean K. Todd	College of the Atlantic	Bar Harbor, ME
Sam Rossman	HSWRI, Michigan State University	East Lansing, MI
Ann Pabst	University of North Carolina Wilmington	Wilmington, NC
Vicky Thayer	NC Division of Marine Fisheries	Morehead City, NC
Wendy Lull	Seacoast Science Center	Rye, NH
Sheila Dean	Marine Mammal Stranding Center	Brigantine, NJ
Robert A. DiGiovanni	Riverhead Foundation for Marine Research and Preservation	Riverhead, NY
Joy S. Reidenberg	Mount Sinai School of Medicine	New York, NY
Dalin D'Alessandro	Portland State University	Portland, OR
Debbie Duffield	Portland State University	Portland, OR
Bruce Mate	Oregon State University	Newport, OR
Jim Rice	Oregon State University	Newport, OR
Rob Young	Coastal Carolina University	Conway, SC
Heidi Whitehead	Texas Marine Mammal Stranding Network	Galveston, TX

### **Consortium of Marine Mammal Stranding Networks**

Mark Swingle	Virginia Aquarium & Marine Science Center	Virginia Beach, VA
Jenny L. Atkinson	The Whale Museum	Friday Harbor, WA
Susan Berta	Orca Network/Central Puget Sound MMSN	Langley, WA
Julie M. Duke	Wolf Hollow Wildlife Rehabilitation Center	Friday Harbor, WA
Jessie Huggins	Cascadia Research Collective	Olympia, WA
Robin Lindsey	Seal Sitters Marine Mammal Stranding Network	Seattle, WA
Jennifer Olson	The Whale Museum	Friday Harbor, WA
Jonathan Scordino	Makah Fisheries Management	Neah Bay, WA

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**Office of the Governor**

Written Testimony

Of

Governor Michael T. Sandoval  
Pueblo of San Felipe  
San Felipe, New Mexico

To

House Committee on Appropriations  
Subcommittee on Commerce, Justice, Science, and Related Agencies

March 31, 2016

Chairman Culberson, Ranking Member Fattah and Members of the Subcommittee, thank you for giving me the opportunity to submit testimony for the record on the FY 2017 Commerce, Justice, Science, and Related Agencies appropriations bill.

Kuwaitisi. Hello. The Pueblo of San Felipe is one of the most culturally conservative of New Mexico's 19 Pueblos. The Pueblo is located about half way between Albuquerque (about 30 miles to the north) and Santa Fe (about 40 miles to the south) at the foot of the Mesa de Tamita. We have existed on this land since time immemorial.

I respectfully submit this testimony on behalf of the Pueblo of San Felipe to inform the Committee of some of the very important programs to not just the Pueblo of San Felipe but to Indian Country as a whole.

The Pueblo of San Felipe is not at all unique when it comes to the issues facing the rest of Indian Country. With a population of just over 3,000, we are not immune to the issues of poverty, high unemployment and high school drop out rates as well as a high incidence of drug and alcohol abuse. In fact, almost 40% of our residents live below the poverty line compared with just 18% for the rest of the state and over 43% of our children living on the Pueblo are impoverished.

As Governor, I take very seriously the central role tribal governments have to protect our citizens. We at the Pueblo of San Felipe share our collective experiences, both ancient and modern, with all Native Americans in Indian Country. It is in these shared experiences that Native people can reflect on our shared social and economic hardships due to a legacy of dispossession, attempted subjugation, and economic deprivation over centuries. It is these hardships that have lead to a successful resurgence of tribal sovereignty and self-determination in



remedying the challenges that have been forced upon Native peoples. But Washington's recent budget tightening and economic austerity (sequester, etc.) make it much more difficult. After all, leaders throughout Indian Country seek the same outcomes as other state and national leaders: to protect the health, safety, and prosperity of the people we serve. It is my hope that Congress will do what is right by American Indians in the upcoming appropriations process and fund vital programs at appropriate levels. Adequate and sometimes increased funding to meet the educational needs of Indian youth; provide adequate health care via the Indian Health Service; ensure responsible resource development for the future; provide safe and secure tribal communities; and supply the long-term investments in tribal public infrastructure and services required to ensure every American Indian enjoys a decent quality of life and has an opportunity to succeed.

I would like to address the specific funding bill this Committee has jurisdiction over, the Commerce, Justice, Science and Related Agencies appropriations bill for FY 2017, and highlight some of the areas of importance to the Pueblo of San Felipe:

**Department of Justice**

- Utilize DOJ appropriations as base funding with tribes so we can set our own tribal priorities.
- We support a 10 percent set-aside from the Crime Victims Fund for tribal governments.
- We support a 10 percent set-aside for Title II Delinquency Prevention Block Grants for tribal governments.
- Create a 10 percent tribal set-aside from funding for all discretionary Office of Justice Programs (OJP) programs, ensure that those funds, along with Tribal funds outside of OJP, are allocated as flexible base funding.

- \$25 million for Tribal Youth Programs.
- \$52 million for Tribal Law Enforcement through COPS Program.

**Department of Commerce**

- \$35 million and tribal set-aside to re-establish NABEC within the Minority Business Development Agency.
- Fund Office of Native American Affairs at \$1.25 million.

These funding levels as well as other increases in funding for important programs across Indian Country are vital to live up to the trust responsibility the United States government has to Indian Country. I am confident that this Congress will work in a way that is good for tribes and allow tribes to make progress on key issues such as energy, trust modernization, tribal infrastructure, housing, telecommunications, economic development, labor and tax reform.

Who:wee'eh (Thank you).

U.S. Commissioners  
 Phil Anderson  
 McCoy Oatman  
 Charles Swanton  
 Robert Turner

**UNITED STATES SECTION  
 of the  
 PACIFIC SALMON COMMISSION**

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**Statement Submitted by  
 W. Ron Allen, Chair  
 U.S. Section Budget Committee of the PACIFIC SALMON COMMISSION  
 BEFORE THE HOUSE COMMITTEE ON APPROPRIATIONS  
 SUBCOMMITTEE ON COMMERCE, JUSTICE, SCIENCE AND RELATED AGENCIES  
 on the FY 2017 Budget for the  
 National Marine Fisheries Service  
 March 31, 2016**

Mr. Chairman, and Honorable Members of the Committee, I am W. Ron Allen, the Alternate Tribal Commissioner and Chair for the U.S. Section Budget Committee of the Pacific Salmon Commission (PSC). I am also Tribal Chairman/CEO of the Jamestown S'Klallam Tribe located on the northern Olympic Peninsula of Washington State. The U.S. Section prepares an annual budget for implementation of the Pacific Salmon Treaty.

Department of Commerce funding in support of implementing the Pacific Salmon Treaty is part of the Salmon Management Activities account in the National Marine Fisheries Service (NMFS) budget. Funding in the Department of Commerce budget intended for the programs to fulfill national commitments created by the Treaty was \$11,170,919 in the 2015 budget. **The U.S. Section estimates that a budget of \$14,700,000 for FY 2017 is needed to implement national commitments created by the Treaty.**

The implementation of the Treaty is funded through the Departments of Commerce, Interior and State. The Department of Commerce principally funds programs conducted by the States of Washington, Oregon, Idaho and Alaska and the National Marine Fisheries Service. The costs of the programs conducted by the states to fulfill national commitments created by the Treaty are substantially greater than the funding provided in the NMFS budget in past years. Consequently the states have supplemented the Federal Treaty appropriations from other sources including state general funds.

The Pacific Salmon Treaty line item of the National Marine Fisheries Service budget was funded at \$6,780,987 for FY 2015 and provides base support for the states of Alaska, Washington, Oregon, and Idaho and the National Marine Fisheries Service to conduct salmon stock assessment and fishery management programs required to implement the Treaty's conservation and allocation provisions for coho, sockeye,

Chinook, chum, and pink salmon fisheries. Effective, science-based implementation of negotiated salmon fishing arrangements and abundance-based management approaches for Chinook, southern coho, Northern Boundary and Transboundary River salmon fisheries include efforts such as increased annual tagging and tag recovery operations, harvest monitoring, genetic stock identification and other emerging stock identification techniques. The U.S. Section identified a need of \$9,700,000 for FY 2017 to fully carry out these activities.

The Chinook Salmon Agreement line item in the Salmon Management Activities is funded at \$1,619,697 in FY 2015 and represents a reduction of \$217,000 from previous levels. This funding supports research and stock assessment necessary to acquire and analyze the technical information needed to fully implement the abundance-based Chinook salmon management program provided for by the Treaty. The states of Alaska, Washington, Oregon, and Idaho, and the twenty-four Treaty Tribes conduct projects that are selected through a rigorous competitive process.

The International Fisheries Commissions line, under Regional Councils and Fisheries Commissions in the NMFS budget is funded at \$356,889 and provides the U.S. contribution to bilateral cooperative salmon enhancement on the transboundary river systems which rise in Canada and flow to the sea through Southeast Alaska. This project was established in 1988 to meet U.S. obligations specified in the Treaty and had been previously funded at \$400,000 annually.

The 2008 Agreement line supports programs to improve the Coded Wire Tag system and to monitor and protect critical Puget Sound Chinook stocks. These funds are necessary to reach a new 2018 agreement with revised fishery provisions between the U.S. and Canada. The amount appropriated for FY 2015 was \$3,023,376. The U.S. Commissioners view continued funding of these programs in the FY 2017 Federal budget as necessary to address Chinook salmon conservation needs and to meet existing Treaty commitments.

The core Treaty implementation projects included in the Pacific Salmon Treaty line, and the U.S. Chinook Agreement line under Salmon Management Activities, as well as the International Fisheries Commission line under Regional Councils and Fisheries Commissions, consist of a wide range of stock assessment, fishery monitoring, and technical support activities for all five species of Pacific salmon evident in the fisheries and rivers from Cape Suckling in Alaska to Cape Falcon in Oregon. The states of Alaska, Washington, Oregon, Idaho, and the National Marine Fisheries Service conduct a wide range of programs for salmon stock abundance assessment, escapement enumeration, stock distribution, and fishery catch and effort information. The information is used to establish fishing seasons, harvest levels, and accountability to the provisions of Treaty fishing regimes.

Like many other programs, funding to implement the Pacific Salmon Treaty decreased in recent years. Prior to that, the base annual Treaty implementation funding remained essentially flat since the inception of the Treaty in 1985. In order to continue to fulfill the Federal commitments created by the Treaty, and as costs and complexity has increased over time, the states had to augment Federal funding with other Federal and state resources. However, alternative sources of funding have been reduced, or in some cases completely eliminated.

In addition to the recent budget reductions due to sequestration, NOAA changed the process for applying administrative fees to the funding intended for the implementation of the Pacific Salmon Treaty. This change was first implemented two years ago, after many years of not charging administrative fees to this account. Multiple administrative fees are applied at Department of Commerce headquarters, National Marine Fisheries Service headquarters and at the regional level resulting in less direct funding available for on the ground activities to implement the Treaty. While the U.S. Section understands the need for appropriate overhead charges to occur at the aforementioned offices to support administrative activities related to the Pacific Salmon Treaty, the current process for and rate of the administrative fees compromises the efforts to successfully implement the Treaty.

The provisions of five annex chapters to the Treaty expire on December 31, 2018. These chapters contain the specifics for implementing the Treaty for each species in each geographic area. The renegotiation for revised annex chapters is underway. In order to ensure that the renegotiations are successfully completed, the programs in the National Marine Fisheries Service budget and contained within the Salmon Management Activities account must be adequately funded. The consequences of not successfully completing the renegotiations will negatively affect the health of Pacific salmon populations and the fisheries that depend on them.

This concludes the Statement of the U.S. Section of the Pacific Salmon Commission submitted for consideration by your committee. We wish to thank the committee for the support given to us in the past. Please let us know if we can supply additional information or respond to any questions the Committee Members may have.

Thank you.

**Peter A. Eckstein, President, IEEE-USA**  
**Testimony Submitted on behalf of the IEEE-USA**

**House Subcommittee on Appropriations**  
**Subcommittee on Commerce, Justice, Science and Related Agencies**  
**FY 2017 Budget Recommendations**

The Institute of Electrical and Electronics Engineers – USA (IEEE-USA) is the leading professional society for technology professionals. We represent approximately 200,000 engineers, computer programmers, scientists and others involved in the creation and use of advanced technologies. As such, our members are acutely aware of the important role basic research plays in our economy, and the federal government's role in supporting that research.

Our policy and appropriations recommendations below cover three of the research agencies whose missions span from studying the cosmos to neutrinos: the National Institute of Standards and Technology, the National Science Foundation and the National Aeronautics and Space Administration.

IEEE-USA urges Congress to consider that these agencies support research that is critical to our national economic and security interests. We respectfully request that they be prioritized in the FY2017 budget.

**National Institute of Standards and Technology (NIST)**

IEEE-USA urges Congress to strongly support NIST laboratory programs.

While many of our members work as academic and government researchers, the majority work in the private sector. As such, we are acutely aware of the vital research done by the National Institute of Standards and Technology (NIST) and the way this research is used by American businesses.

NIST's work usually avoids the headlines and goes largely unnoticed by society. But while NIST is less known by the American public than other agencies, its engineer and scientist researchers are leading the way globally in areas from biomedical and fire safety, to communications and nuclear security. For over one hundred years NIST has quietly been facilitating research to help the American economy thrive. In these economically uncertain times, it is more important than ever that Congress invest in NIST's work. The public may not know what NIST does, but they certainly know the results – more innovation, more growth and more jobs.

From its modest beginnings as a measurement lab, NIST has grown to include seven major research facilities providing assistance to businesses all across our economy. NIST researchers develop cybersecurity standards, create ways to measure the optical properties of materials, reduce earthquake risk in buildings, and do a thousand other things that help Americans and American businesses. NIST remains a vital, if low-key, part of America's economic prosperity.

Congress needs to ensure that NIST is given the priority it deserves in the FY 2017 budget. America cannot afford to underinvest in one of the core agencies dedicated to making American businesses more productive and American scientists and engineers more innovative. On behalf of America's engineering

professionals, most of who work in the private sector, IEEE-USA recommends the following for the FY 2017 budget.

### **Industrial Technology Services (ITS)**

NIST's leading role in federal industrial technology programs directly helps the U.S. manufacturing sector to grow and expand through two hallmark manufacturing programs: The Hollings Manufacturing Extension Partnership (MEP) program and the National Network for Manufacturing Innovation (NNMI).

These programs provide small and medium-sized businesses with access to federal resources, which in turn allows them to grow and improve the U.S. economy. IEEE-USA supports the President's budget request of \$34 million above FY 2016 enacted levels for ITS and, in particular, requests that Congress appropriate \$1.9 billion to fully fund a network of 45 institutes within the NNMI program.

#### Hollings Manufacturing Extension Partnership (MEP)

IEEE-USA supports strong, steady funding for the NIST Manufacturing Extension Partnership Program. NIST's Manufacturing Extension Partnership program enhances U.S. competitiveness by partnering with manufacturers to allow them to better utilize federal resources to address manufacturing challenges. Close to 99 percent of all U.S. manufacturing firms are small or medium sized. The MEP program supports these vital manufacturers in every state and Puerto Rico.

MEP centers helped 29,101 U.S. manufacturers in FY 2015 to develop new products, increase their customers, expand into global markets, and better utilize new technology. MEP services resulted in the creation of over 68,000 jobs, \$3.2 billion in cost savings, \$3.1 billion in new investments and \$8 billion in new and retained sales in 2015.

MEPs are increasingly focused on small businesses in rural areas to improve economic opportunities throughout the U.S.

#### National Network for Manufacturing Innovation

IEEE-USA supports strong and stable funding for NIST's National Network for Manufacturing Innovation. Competitive funding to establish and grow this network will aid the continual growth of the U.S. manufacturing sector. IEEE-USA members have directly benefited from these manufacturing innovation institutes, which facilitate technology transfer. NNMI has been especially helpful in developing a scalable, cost-effective, and high performing U.S. manufacturing infrastructure. The program also allows for the acceleration and professional development of the next generation manufacturing workforce. Lastly, NNMI provides opportunities for U.S. universities to partner with the private sector to work together to address industry problems.

### **NIST Research Facility Modernization Funding**

NIST laboratories and facilities are critical to its research and development activities. The facilities are, however, in need of upgrades to meet modern health and safety standards. Many of these facilities were built decades ago and are in danger of becoming obsolete without major renovations.

IEEE-USA supports the President's budget request of \$100 million to renovate and modernize NIST facilities. Improvements and upgrades made to NIST facilities will directly benefit NIST research projects, including those in nuclear security, advanced computing, biomanufacturing, and communications. IEEE-USA was pleased that the 2015 omnibus spending bill provided increases for disaster resilient building and

infrastructure programs, cryptographic capabilities, materials genome, and quantum-based sensors programs, but more needs to be done.

Major needed upgrades include the radiation physics buildings in Gaithersburg, MD and Boulder, CO. Flooding at some facilities has hindered research on wireless technology, satellite calibration, radiation exposure for U.S. workers, and medical imaging. NIST nuclear forensic lab activities have been delayed due to needed installations and upgrades.

By increasing building renovation funding, Congress can begin to address the estimated \$300 million backlog of basic repairs needed at NIST facilities. We cannot expect NIST researchers to conduct 21<sup>st</sup> century work in mid-20<sup>th</sup> century facilities. Infrastructure is expensive, but failing to maintain our research infrastructure will prove to be even more expensive to our economy in the long-run.

### **National Science Foundation (NSF)**

IEEE-USA strongly urges Congress to appropriate modestly increased investments for the NSF that lead to real growth for the agency's programs. In particular, we request funding increases in the Engineering Directorate and other disciplines that fall within the Research and Related Activities Account as well as for major research equipment and facilities construction. Additionally, IEEE-USA requests that Congress appropriate increased funding for NSF's cross-cutting I-Corps program and the agency's cybersecurity research programs.

Over the 66 years of its existence, NSF grants have supported 217 Nobel Laureates. Basic research, which by its nature is the search for new knowledge, has proven many times over to offer significant contributions to the U.S. economy and to our national priorities. The NSF's funding impacts 20,600 senior researchers, postdocs, graduate and undergraduate students, K-12 students, and educators.

The interdisciplinary nature of research, particularly in the earliest stages, is complex and non-linear. Discoveries in engineering fields, for example, have contributed to advancements in understanding gravitational waves. Physics and chemistry research provides the basis for fundamental engineering research which contributes to advances in biomedical devices that cure diseases. The NSF's fiercely competitive grants process helps advance U.S. science and engineering excellence and is the global gold standard for doing so.

### **I-CORPS**

NSF's Innovation Corps program, which partners U.S. university researchers with entrepreneurs, provides the means for university research to better contribute to products and services that grow the U.S. economy. By supporting the unique public-private partnership, the Innovation Corps program affords university researchers with the skill sets necessary to accelerate the development of tangible applications for their research while giving entrepreneurs access to cutting edge ideas.

I-Corps has had many successes in providing pathways to educate researchers and entrepreneurs. In some cases, university-based centers for entrepreneurship and technology transfer offices have formed partnerships with schools of businesses. These unique partnerships have led to the acceleration of many research projects into new economic markets, from energy and materials sciences to biomolecular applications. By supporting collaborations between faculty and student researchers in engineering, sciences, and businesses, the I-Corps program enables U.S. research institutions the



opportunity to build on their business models, analytical tools, and customer interactions so their entrepreneurs can better engage with industry partners and local businesses.

#### NSF Cybersecurity Programs

IEEE-USA's engineers, computer scientists, and other researchers are working at the cutting edge of cybersecurity research. NSF cross-cutting programs provide funding to continue to improve U.S. cyberspace capabilities. IEEE-USA supports the President's budget request of \$100 million for the Cyberinfrastructure Framework for the 21<sup>st</sup> Century Science, Engineering, and Education (CIF21) and also the \$150 million requested for the Secure and Trustworthy Cyberspace (SaTC) program.

#### NSF Facilities Construction

IEEE-USA urges Congress to provide strong support for the National Science Foundation's facilities construction account. For the U.S. to continue to be at the forefront of innovation, the facilities where research is conducted need to be maintained and updated. U.S. high tech companies and the general public ultimately benefit from the federal government maintaining world class facilities.

Principal investigators who are professors at U.S. research universities need to use advanced facilities, unavailable to them at individual academic institutions in order to conduct experiments. The National Science Foundation, Department of Energy and other research agencies provide funding to support construction and maintenance of these facilities. For our principal investigators to be competitive, we must maintain support for these facilities, especially since our international competitors are building first-rate updated facilities to compete with the U.S.-based researchers.

#### NSF Engineering Directorate

Whether it is research into manipulating atoms and molecules to create materials with new properties, or NSF's support for advances in information technology, NSF sponsored engineering projects are at the forefront of efforts to maintain our global competitiveness. NSF computing, engineering, nanoscience, material science programs are multi-disciplinary in nature and produce huge benefits to the U.S. economy. NSF's support of physics, chemistry and biology also aids the engineering research community.

IEEE-USA members urge Congress to consider steady, robust funding for the Engineering and other Directorates within NSF's Research and Related Activities. Without this predictability and support, projects cannot progress in a timely manner and end up costing the taxpayer more in the long term. There is also a risk that our international competitors, many of whose governments invest a greater percentage of their GDP in research than we do, will outpace the U.S., costing us high-skilled talent.

#### NASA

NASA's balanced support for aeronautics research, exploration operations, and science programs benefit U.S. national security and help us better negotiate with international partners.

IEEE-USA members work in a wide variety of fields that contribute to and directly support NASA. IEEE-USA was elated that Congress sought to provide NASA with \$19.3 billion, an increase of \$1.27 billion, in last year's omnibus spending bill. The commercial crew program will be one of the primary beneficiaries of this funding, which will allow the agency to launch on schedule. We ask that you maintain these levels in FY2017.

### Aeronautics Research

IEEE-USA supports NASA's role in advancing its capabilities in safety, capacity, and efficiency. Projects developed for NASA's use in space regularly transform the way we live as societies here on Earth. The agency's work in aeronautics has drastically altered the U.S. aviation industry, the development of aircraft and unmanned aerial vehicles. NASA aeronautics partnerships with the private sector foster the extensive growth in commercial space flight and space-related manufacturing.

### Space Technology

NASA's space technology programs also support the development of the U.S. commercial space sector by working to develop and commercialize new technologies that can be utilized by the U.S. aerospace community. IEEE-USA Members regularly receive NASA's SBIR and STTR grants and strongly support NASA's engagement with academia and industry during the early stages of their research and development projects.

### Space Exploration

NASA's exploration and space operations programs are some of its most visible and inspiring. Continued development of transportation systems is imperative if we are to cease paying Russia for crew transport services. Other missions to explore space enhance our understating of the universe and develop advanced technologies that improve the lives of people around the globe. These missions give NASA direction and purpose, making their programs more effective and more productive.

### Science

IEEE-USA would like to commend Congress's interest in the James Webb Space Telescope and urges appropriators to provide strong funding for this telescope so it can maintain its 2018 launch date. Hubble images continue to be used to study astronomy and this next generation telescope will allow U.S. researchers increased access to data and information about our universe. Our understanding of space weather will be improved by NASA's launch of two Explorer missions this decade. NASA's missions produce cutting edge results for the scientific and engineering community.

Finally, NASA's unique ability to provide opportunity for educators and students engage the next generation of engineers and scientists. Space, more than other areas of science or engineering, has inspired young students explore the universe and their own surroundings. NASA's Space Grant, Experimental Program to Stimulate Competitive Research (EPSCOR), and Minority University Research and Education Project (MUREP) programs build on student interest in space-related research and provide them resources to pursue their interests at the undergraduate and graduate level.

IEEE-USA recommends that Congress provide steady increased support the federal research agencies. As the U.S. seeks to continue to be competitive on the world stage, it is critical that Congress provide robust investments in research programs and additionally provide funding for upgrades and maintenance of our research facilities. Doing so will attract talented students to our universities and will provide incentives for researchers from all over the world to come to the U.S. to conduct scientific and engineering work which in turn will lead to the development of new products, services, and corporations.

IEEE-USA members thank you for your work in determining their appropriations and look forward to working with you as the budget process moves forward.

## INDEPENDENT REVIEW TEAM

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**TESTIMONY OF ELBRIDGE COOCHISE AND RALPH GONZALES, CHIEF JUSTICES, RETIRED  
INDEPENDENT TRIBAL COURTS REVIEW TEAM  
SUBMITTED TO THE HOUSE SUBCOMMITTEE ON COMMERCE, JUSTICE, SCIENCE RELATED  
AGENCIES APPROPRIATIONS FOR THE FISCAL YEAR 2017  
DEPARTMENT OF JUSTICE – TRIBAL COURTS  
March 31, 2016**

Thank you for the opportunity to testify today and to address the serious funding needs that have limited and continue to hinder the operations of Tribal judicial systems in Indian Country. We are representing the Independent Tribal Court Review Team. We thank this Committee for the additional \$10.0 million funding in FY 2010, the last significant increase. These funds were a blessing to Tribes. Even minimal increases are always put to good use. It is the strong recommendation of the Independent Tribal Courts Review Team that the Federal Tribal Courts budget be substantially increased in FY 2017 to support the needs of Tribal judicial systems.

### **BUDGET PRIORITIES, REQUESTS AND RECOMMENDATIONS**

1. **+\$2.6 Million - Support FY 2017 Proposed Increased for Tribal Courts**
2. **+\$58.4 Million authorized under the Indian Tribal Justice Act of 1993, P.L. 103-176, 25 USC 3601 and re-authorized in year 2000 P.L. 106-559 (no funds have been appropriated to date)**
3. **Support the requests and recommendations of the National Congress of American Indians**

#### **The increase will support:**

1. Hiring and Training of Court Personnel
2. Compliance with the Tribal Law and Order Act of 2010
3. Compliance with and implement the VAWA Act of 2013
4. Salary Increases for Existing Judges and Court Personnel
5. State-of-the-Art Technology for Tribal Courts
6. Security and Security Systems to Protect Court Records and Privacy of Case Information
7. Tribal Court Code Development
8. Financial Code Development

**The Independent Tribal Courts Review Team supports the proposed \$2.6 million increase for Tribal courts in the FY 2017 President's Budget.** Tribal Courts need an immediate, sustained and increased level of funding. The lack of funding has delayed implementation of the Tribal Law and Order Act (TLOA) and the Violence Against Women Act (VAWA) to a critical level and the resources that have been appropriated are required to provide Attorneys to represent Non-

Indian defendants which further strain the capacity of the Tribal Judicial System. Tribal systems remain underfunded, understaffed and ill-equipped to function effectively and in a manner comparable to non-Indian government judicial systems. Tribal Courts are at a critical stage in terms of need. The Tiwahe Initiative, as a means to be responsive to Tribal concerns, demonstrates that the Administration and Congress are listening to the Tribes, but there needs to be a greater effort to fund the authority that was enacted in 1993.

Section 402 of TLOA reauthorized the Tribal Justice Act, and Indian Tribal Justice Technical and Legal Assistance Act of 2001. These Acts authorize funding for Tribal court judges, court personnel, public defenders, court facilities, and the development of records management systems and other needs of Tribal court systems. The Tribal Justice Act, originally enacted December 1993, authorized the appropriation of \$58.4 million in Tribal court base funding. Yet, not a single dollar under the Tribal Justice Act has been appropriated in the twenty-two years since it was enacted. Of particular note is the provision of the Tribal Justice Act that states that Federal funds may be used specifically for "training programs and continuing education for Tribal judicial personnel." Appropriations should finally be made to fulfill the promise of these Acts.<sup>1</sup> **We recommend that the Interdepartmental Tribal Justice, Safety and Wellness Session, of which the Department of the Interior (DOI) is a member, resume outreach to support the efforts of TLOA, VAWA and the Tiwahe Initiative.**

The Tiwahe Initiative was launched in 2015 to address several lagging family welfare and poverty issues in Indian country including a strategy to reduce incarceration in Indian Country. The alternative to incarceration is intended to address underlying causes of repeat offenses, such as substance abuse and the lack of adequate social service support, by utilizing alternative courts to increase treatment opportunities, probation programs, and interagency and intergovernmental partnerships with Tribal, State and Federal stakeholders. In response to the unusual high rates of alcohol and/drug related repeat offenders that are dominating the resources of the justice system, the Bureau of Indian Affairs (BIA) created the Diversion and Re-Entry Division (DRD) within the Tribal Justice Support Directorate. In FY 2016 Tribal Courts received a 4.9% increase, and the budget request for 2017 is \$2.6 million over the enacted 2016 level. There is an even greater need to ensure that Court personnel are trained, equipped and prepared to address these new challenges. **We support the FY 2017 proposed \$21.0 million increase for Tiwahe to expand social services, Indian Child Welfare, housing, Tribal courts and job placement and training.**

#### **Background:**

The Bureau of Indian Affairs provides funding to Tribal governments to supplement their justice systems including courts. Tribal courts play a "vital role" in Tribal Self-Determination and Self-Governance as cited in long-standing Federal policy and Acts of Congress. Funding levels from BIA to support Tribal justice systems have not met the Federal obligations.

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<sup>1</sup> Defining the Indian Civil Rights Act's "Sufficiently Trained" Tribal Court Judge, Jill Elizabeth Tompkins, American Indian Law Journal [Vol. 4:53]

There is a great deal of variation in the types of Tribal courts and how they apply laws. Some Tribal courts resemble Western-style courts in that written laws and court procedures are applied. Others use traditional Native means of resolving disputes, such as peacemaking, elders' councils, and sentencing circles. Some Tribes have both types of courts. The BIA also manages a small number of CFR (Code of Federal Regulations) courts.

Since 1999, Bureau of Justice Assistance (BJA) in the Department of Justice (DOJ) has administered the Tribal Courts Assistance Program, designed to provide funds for Tribes to plan, operate, and enhance Tribal judicial systems. They have made attempts to evaluate Tribal Courts but discovered their means of doing so was insensitive to American Indian and Alaska Native (AI/AN) people and unrealistic in the absence of elements that were key to Indian Country, such as: (1) the importance of Tribal culture and traditions; (2) the inability to apply state and local criminal justice initiatives to Tribal settings; (3) the lack of cooperation from non-Tribal entities; and, (4) the lack of available data on Tribal justice.

The Independent Tribal Court Review Team has had more hands on success in reviewing Tribal Court Systems. For seven years, we traveled throughout Indian Country assessing how Tribal Courts are operating. During this time, we have completed 84 Court Reviews. We also completed 28 Corrective Actions. There is no one with more hands-on experience and knowledge regarding the current status of Tribal Courts than our Review Team.

***Justification for Request:***

1. **Hiring and Training of Court Personnel** - Tribal Courts make do with underpaid staff, under-experienced staff and minimal training. (We have determined that hiring Tribal members limits the inclination of staff to move away; a poor excuse to underpay staff.)
2. **Compliance with the Tribal Law & Order Act of 2010** – To provide Judges, Prosecutors, Public Defenders, who are attorneys, who are bared to do “enhanced sentencing” in Tribal courts
3. **Compliance with the 2013 VAWA Act** – to provide Tribal Courts with the ability to provide non-Indians with all the rights under the U.S. Constitution in domestic violence actions in Tribal courts (12 person juries, provide Licenses attorneys for non-Indians, provide licensed attorneys in court personnel in domestic violence cases as in TLOA, etc.)
4. **Salary Increases for Existing Judges and Court Personnel** – Salaries should be comparable to local and State Court personnel to keep pace with the non-Tribal judicial systems and be competitive to maintain existing personnel.
5. **Tribal Courts Need State-of-the-Art Technology** - (software, computers, phone systems, tape recording machines.) Many Tribes cannot afford to purchase or upgrade existing court equipment unless they get a grant. This is accompanied by training expenses and licensing fees which do not last after the grant ends.
6. **Security and Security Systems to Protect Court Records and Privacy of Case Information** - Most Tribal Courts do not even have a full time Bailiff, much less a State-of-the-Art security system that uses locked doors and camera surveillance. This is a tragedy waiting to happen.
7. **Tribal Court Code Development** - Tribes cannot afford legal consultation. A small number of Tribes hire on-site staff attorneys. These staff attorneys generally become enmeshed in

economic development so code development does not take priority. Tribes make do with under-developed Codes. The Adam Walsh Act created a hardship for Tribes who were forced to develop codes, without funding, or have the state assume jurisdiction. (States have never properly overseen law enforcement in a Tribal jurisdiction.)

- 8. Financial Code Development** - We have rarely seen Tribes with developed financial policies. The process of paying a bond, for example, varies greatly from Tribe to Tribe. The usual process of who collects it, where it is collected and how much it is, is never consistent among Tribes.

There are many positive aspects about Tribal Courts. It is clear that Tribal Courts and justice systems are vital and important to the communities where they are located. Tribes value and want to be proud of their Court systems. Tribes with even modest resources tend to allocate funding to Courts before other costs. After decades of existence, many Tribal Courts, despite minimal funding, have achieved a level of experience and sophistication approaching, and in some cases surpassing, local non-Indian Courts.

Tribal Courts, through the Indian Child Welfare Act, have mostly stopped the wholesale removal of Indian children from their families. Indian and Non-Indian Courts have developed formal and informal agreements regarding jurisdiction. Tribal governments have recognized the benefit of having law-trained Judges, without doing away with Judges who have cultural/traditional experience. Tribal Court systems have Appellate Courts, jury trials, well-cared-for Courthouses (even the poorer Tribes), and Tribal Bar listings and fees. Perhaps most importantly, Tribes recognize the benefit of an independent judiciary and have taken steps to insulate Courts and Judges from political pressure. No longer in Indian country are Judges automatically fired for decisions against the legislature.

Tribal Courts have other serious needs. Tribal Appellate Court Judges are mostly Attorneys who dedicate their services for modest fees that barely cover costs for copying and transcription fees. Tribal Courts do offer Jury Trials. In many Courts, one sustained Jury Trial will deplete the available budget. The only place to minimize expenses is to fire staff. Many Tribal Courts have Defense Advocates. These advocates are generally not law trained and do a good job protecting an individual's rights (including assuring speedy trial limitations are not violated.) However, this is a large item in Court budgets and if the defense advocate, or Prosecutor, should leave, the replacement process is slow.

On behalf of the Independent Tribal Court Review Team, Elbridge Coochise, Ralph Gonzales, Charles Robertson, Philip Lujan and Myrna Rivera, thank you for this opportunity to appear before you today.

Testimony of

Kasey White

Director for Geoscience Policy  
for the

**Geological Society of America**

Regarding the

**National Science Foundation**

and

**National Aeronautics and Space Administration**

FY 2017 Appropriation

to the

**U.S. House of Representatives**

Committee on Appropriations

Subcommittee on Commerce, Science, Justice, and Related Agencies

March 23, 2016

### Summary

The Geological Society of America (GSA) supports strong and sustained investments in geoscience research and education at the National Science Foundation (NSF) and National Aeronautics and Space Administration (NASA). We encourage Congress to appropriate \$8.0 billion and fully support geoscience research at NSF. We support the increase proposed for Earth science research at NASA in the request but are concerned about proposed cuts to planetary science in the request. Investment in NSF and NASA is necessary for America's future economic and science and technology leadership, both through discoveries that are made and the talent developed through their programs. Earth and space science at these two agencies play a vital role in understanding and documenting mineral and energy resources that underpin economic growth; researching and monitoring potential natural hazards that threaten U.S. and international security; and determining and assessing water quality and availability.

*The Geological Society of America, founded in 1888, is a scientific society with over 26,000 members from academia, government, and industry in all 50 states and more than 100 countries. Through its meetings, publications, and programs, GSA enhances the professional growth of its members and promotes the geosciences in the service of humankind.*

SCIENCE □ STEWARDSHIP □ SERVICE

### National Science Foundation

The Geological Society of America (GSA) urges Congress to provide the National Science Foundation (NSF) \$8.0 billion in fiscal year 2017. Sustained increases beyond research inflation are necessary to regain America's economic and science and technology leadership. Facing a budget that does not keep pace with inflated costs of research over the past few years, NSF has reduced the number of awards funded each year. This decline is particularly burdensome for early career scientists. Limiting funding opportunities for early career researchers today places our position as a science and technology leader of tomorrow in jeopardy.

Geoscience research is a critical component of the overall science and technology enterprise and should be funded without restriction. NSF's Directorate for Geosciences is the largest federal supporter of basic geoscience research at universities. NSF's programs in geoscience research and graduate and undergraduate student support contribute significantly to the education and training of the geoscience workforce. A recent report by the American Geosciences Institute, *Status of Recent Geoscience Graduates 2015*, illustrates the diversity of careers supported by geoscience research. For example, the report found that 67 percent of master's graduates found jobs in the oil and gas industry, while environmental services, which includes fields such as environmental consulting and remediation of land assets such as water and soil, hired the highest percentage of bachelor's graduates. Other industries hiring geoscientists include manufacturing, trade, construction, information technology services, and agriculture.

Increased investments in NSF's geoscience portfolio are necessary to address such issues as natural hazards, energy, water resources, and education; geoscience is a key contributor to groundbreaking research across disciplines at NSF. Specific needs include:

- The recent National Research Council report *Sea Change: 2015-2025 Decadal Survey of Ocean Sciences* highlights research questions to guide NSF investment. Tasked "to identify areas of strategic investment with the highest potential payoff," the report identifies questions that will guide our understanding of risks to our planet including: What are the rates, mechanisms, impacts, and geographic variability of sea level change? How different will marine food webs be at mid-century? In the next 100 years? How can risk be better characterized and the ability to forecast geohazards like megathrust earthquakes, tsunamis, undersea landslides, and volcanic eruptions be improved?
- Natural hazards are a major cause of fatalities and economic losses. Landslides alone, which occur in every state, cause more than \$3 billion in damage each year. NSF research improves our understanding of these geologic hazards, which allows for effective planning and mitigation. We urge Congress to support NSF investments in fundamental Earth science research and facilities that underpin innovations in natural hazards monitoring and warning systems through Risk and Resilience initiative such as "Prediction of and Resilience Against Extreme Events."
- Recent studies have shown that rare earth elements are essential to the production, sustainment, and operation of U.S. military equipment. Reliable access to the necessary material is a bedrock requirement for the Department of Defense. In addition, many emerging energy technologies – such as wind turbines and solar cells – depend upon rare



earth elements and critical minerals that currently lack diversified sources of supply. The Division of Earth Sciences supports research on the structure, composition, and evolution of the Earth and the processes that govern the formation and behavior of the Earth's materials. This research contributes to a better understanding of the natural distribution of mineral and energy resources for future exploration.

- The devastating droughts in the western United States highlight our dependence on water. NSF's research addresses major gaps in our understanding of water availability, quality, and dynamics, and the impact of both a changing and variable climate, and human activity, on the water system. The initiative "Innovations at the Nexus of Food, Energy and Water Systems" highlights the important linkages and research needs between these systems.
- The Division of Atmospheric and Geospace Sciences provides critical infrastructure and research for understanding our planet, such as weather and precipitation variability on multiple time scales and atmospheric and space weather hazards.

### **National Aeronautics and Space Administration**

GSA supports increased investment in Earth science and planetary exploration research at National Aeronautics and Space Administration (NASA). We support the increases proposed for Earth science research in the FY2017 request. The National Academies' Earth Science Decadal Survey begins with an explanation of the importance of this research:

*"Understanding the complex, changing planet on which we live, how it supports life, and how human activities affect its ability to do so in the future is one of the greatest intellectual challenges facing humanity. It is also one of the most important challenges for society as it seeks to achieve prosperity, health, and sustainability."*

The data and observations from Earth observing missions and research are a tremendously important resource for natural resource exploration and land use planning, as well as assessing water resources natural disaster impacts, and global agriculture production. GSA supports interagency efforts to ensure the future viability of Landsat satellites, including Landsat 9 and 10, as well as funding to increase the capabilities and uses of multi-spacecraft constellations of small scientific satellites.

Two missions – Pre-Aerosol, Clouds, and Ocean Ecosystem (PACE) and Surface Water and Ocean Topography (SWOT) – will provide valuable information to decision makers on water. PACE will help monitor oil spills and detect algal blooms, which have a significant negative impact on human health, ocean ecology, and fisheries. The global survey of Earth's surface water by SWOT could provide key data for flood and drought management; improve risk assessments by the insurance industry; harness energy; and optimize both military and commercial marine operations.

GSA is concerned, however, about proposed cuts to planetary science in the FY 2017 request; we appreciate past congressional support for this area and urge you to continue to increase this important area to support priority areas identified in the Planetary Science Decadal Survey.

Planetary research is directly linked to Earth science research and cuts in either program will hinder the other. To support missions to better understand the history and workings of the entire solar system, planetary scientists engage in both terrestrial field studies and Earth observation to examine geologic features and processes that are common on other planets, such as impact structures, volcanic constructs, tectonic structures, and glacial and fluvial deposits and landforms. In addition, geochemical planetary research studies include investigations of extraterrestrial materials now on Earth, including lunar samples, meteorites, cosmic dust particles, and, most recently, particles returned from comets and asteroids.

Exploration of other planets in the solar system requires major national and international initiatives, significant funding levels, and long timelines for mission planning and collaborative research. For scientists, the funding cycle is much shorter than typical mission cycles, and in particular, graduate student and career-development timelines are much shorter than mission timeframes. Therefore, the growth and continued development of a robust workforce capable of conducting complex space missions and analyzing the scientific data returned from such missions does not depend on individual missions as much as it depends upon a consistent, sustained program that educates and develops planetary scientists.

#### **Support Needed to Educate Future Innovations and Innovators**

Earth science research and education are fundamental to training the next generation of Earth science professionals. We are very concerned that cuts in Earth science funding will cause students and young professionals to leave the field, potentially leading to a lost generation of professionals in areas that are already facing worker shortages.

A 2013 report by the National Research Council, *Emerging Workforce Trends in the Energy and Mining Industries: A Call to Action*, found, “In mining (nonfuel and coal) a personnel crisis for professionals and workers is pending and it already exists for faculty.” Another recent study, *Status of the Geoscience Workforce Report 2014*, found an expected deficit of approximately 135,000 geoscientists by 2022.

Increased NSF and NASA investments in Earth science education are necessary to meet these workforce needs and develop an informed, science-literate electorate. Earth scientists will be essential to meeting the environmental and resource challenges of the twenty-first century. NSF’s Education and Human Resources Directorate researches and improves the way we teach science and provides research and fellowship opportunities for students to encourage them to continue in the sciences. Similarly, NASA’s educational programs have inspired and led many into science careers. GSA fully supports these efforts, as well as new and existing programs to make the geoscience workforce more diverse.

Please contact GSA Director for Geoscience Policy Kasey White at [kwhite@geosociety.org](mailto:kwhite@geosociety.org) for additional information or to learn more about the Geological Society of America – including GSA Position Statements on water resources, planetary research, energy and mineral resources, natural hazards, climate change, and public investment in Earth science research.

**Congress of the United States**  
**Washington, DC 20515**

**TESTIMONY OF**  
**CONGRESSMAN SAM GRAVES (MO-06)**

**ON**  
**APPROPRIATIONS FISCAL YEAR 2017 BUDGET HEARING**

**BEFORE THE**  
**HOUSE COMMERCE, JUSTICE, SCIENCE AND RELATED AGENCIES**  
**SUBCOMMITTEE OF THE HOUSE COMMITTEE**

**THURSDAY MARCH 31, 2016**

Chairman Culberson and Ranking Member Honda: Thank you for the opportunity to provide testimony on an important issue not just for my district in Missouri, but nationwide. I am proud to testify on behalf of the Baldrige Performance Excellence Program, which is located within the Department of Commerce's National Institute of Standards and Technology (NIST). Since Fiscal Year 2012, the private Baldrige Foundation has paid salaries and expenses for employees and program operations at the Baldrige Program office in NIST from its own foundation assets. Mr. Chairman, I am not aware of any other private foundation that pays the salaries and operating expenses for federal employees. This is why I am requesting that \$7,500,000 be provided in the Fiscal Year 2017 Commerce, Justice and Science Appropriations bill for the Baldrige Performance Excellence Program and NIST's Baldrige Cybersecurity Excellence Program initiative. Since the private foundation has been paying these operating expenses for the last several years, foundation funds have begun to dry up, putting this extraordinary program in jeopardy. If we can restore the public funds for this program, the Baldrige Foundation will be able to continue contributing private funds to the program.

The existing NIST Baldrige Performance Excellence Program was authorized in 1987 by Public Law 100-107, with the purpose of strengthening U.S. competitiveness. It was established as a public-private partnership that has been evaluating organizational performance, identifying role model organizations, and sharing their best practices for over 28 years, resulting in dramatic improvements in organizational performance, outcomes, and sustainability as well as over \$24 billion in economic benefit to the nation.

The Baldrige Program is important to my district and state, as well as the nation, for a number of reasons. The Baldrige Performance Excellence Program develops and provides the world-renowned Baldrige Excellence Framework - a management best practices, standards, assessment, and leadership framework that is globally recognized and used by small businesses, industry, and governmental organizations across all business and organizational sectors including health care and education. It also serves as the foundation for more than 33 state-based Baldrige Programs covering all 50 states, as well as the new Community of Excellence 2026 initiative which uses

the Baldrige Framework to strengthen communities by bringing together leaders and organizations from all sectors to work together and find innovative and creative solutions to the challenges they face. NIST has measured the Baldrige return on investment at greater than 820 to 1 for the U.S. Government.

Most widely known for the Malcolm Baldrige National Quality Award, the Baldrige Performance Excellence Program is not simply an awards program. Its main mission is to improve U.S. productivity and competitiveness through the regularly updated, leading-edge Baldrige Excellence Framework, and through education and global leadership in promoting performance excellence. Awards are given annually following an extensive evaluation process that many organizations participate in each year, both through the national program and many non-funded state and local programs that work with the national program. These evaluations are done through the efforts of thousands of expert volunteers who help these organizations improve their performance and competitiveness. These volunteers, who are leaders from all sectors of our economy, each contribute hundreds of hours a year to improve U.S. organizations. These activities demonstrate one of the intents of the Baldrige Program, which was to identify role model organizations and require them to share their successful practices with other U.S. businesses in the health care, education, and business sectors.

The Baldrige Program has been raising standards in health care by helping improve quality, safety and affordability. In fact, the President's Council of Advisors on Science and Technology has recommended that the Department of Health and Human Services (HHS) build on the Baldrige program to help improve the cost and quality of healthcare.

The Baldrige Program has developed standards for improving our nation's education system through efficiency and student performance. Demonstrated benefits include improved AP course participation and performance, standardized test scores, role-model graduation rates, and college attendance rates. School districts that have adopted Baldrige standards have achieved role-model graduation rates: 97.4% (Pewaukee School District, Wisconsin); 93%–95% sustained over 3 years (Jenks Public Schools, Oklahoma); the highest rate of any large U.S. school district over 2 years (Montgomery County Public Schools, Maryland); and 7% average annual improvement for 4 years (Iredell-Statesville Schools, North Carolina).

Program standards have also been driving manufacturing job creation in private business. According to economists, to develop their performance excellence strategies, CEOs report greater innovation and more benefits if they used the Baldrige Criteria than if they had used the best available alternatives. Baldrige organizations demonstrate growth in jobs nearly 20 times greater than matched industries and time periods (63% versus 3.2%, per the Bureau of Economic Analysis and Labor Statistics).

The Baldrige Program is important to me because the State of Missouri and my Sixth District has benefitted greatly from it. Since 2012, there have been seven Missouri recipients of the Baldrige Quality Award. In my district, the Park Hill School District of Kansas City is a two-time Baldrige award winner, making it the only school district in the history of the award to win it twice. Park Hill provides world-class K-12 education to students in the southern Platte County

area through its two high schools, three middle schools, ten elementary schools, a day school, an early childhood education program, and a community education program.

There are a number of additional success stories in Missouri due to the Baldrige program and Missourians enthusiasm about striving to achieve these standards of excellence in business, health care and education. In fact, the Communities of Excellence 2026 initiative was launched by Baldrige award recipients from Missouri. Last year alone, there were four applicants from Missouri for the Baldrige Award, which represented 3,653 jobs, 51 work locations, more than \$835 million in revenues/budgets, and over 16 million customers served. Baldrige examiners in Missouri also volunteered over \$167,000 in services last year.

Baldrige standards have been so successful that the American Health Care Association (AHCA) and National Center for Assisted Living (NCAL) have established The AHCA/NCAL National Quality Award Program. This program provides a pathway for providers of long-term and post-acute care services to journey towards performance excellence. It is based on the values and criteria of the Baldrige Performance Excellence Program. Many Missouri health care providers have adopted these standards, making the state one of the nation's leaders in health care. In 2015 alone, seven Missouri health care centers were recipients of either the silver or bronze AHCA/NCAL National Quality Award. In my district, Salt River Community Care was one of these recipients. It provides top-notch nursing home services in its 120 bed facility. In fact, Salt River has been issued a 4-Star rating by the Centers for Medicare & Medicaid Services. Life Care Center of Carrollton was another 2015 award recipient in my district. This facility is tremendously important to the rural town of Carrollton through its providing of inpatient and outpatient rehabilitation and 24-hour skilled nursing care.

Missouri businesses continue to succeed and provide customer satisfaction by adopting Baldrige standards. MidwayUSA, which is a two-time Baldrige Award recipient, is a world leading Internet retailer that offers more than 110,000 products from more than 800 suppliers to 1.2 million active customers for shooting, hunting and outdoor activities. With more than 350 employees and gross sales in excess of \$350 million, MidwayUSA continues to be one of the best-run and widely respected businesses in America. Since 2006, they have earned greater than 90% customer approval ratings. Since 2004 it has experienced a 43.8% average annual growth rate in net income and 21.3% average annual growth rate in gross sales, making it one of the fastest-growing companies in its industry. MidwayUSA and its employees and customers have benefitted tremendously from the Baldrige standards.

Mid-America Transplant Services (MTS), a private, nonprofit organ procurement organization and eye and tissue bank is another example of success through the adoption of Baldrige standards. By partnering with hospitals, MTS procures donated organs and tissues and then provides them to transplant centers and tissue processors, in both designated service areas and across the country. MTS also operates three stations at Department of Motor Vehicles that support its mission by making it easy for motorists to register as donors while renewing drivers' licenses or automobile registrations. Through the adoption of Baldrige standards of excellence, MTS has become the builder of the nation's first stand-alone organ recovery facility, which has significantly reduced the cost of procuring organs compared with the cost of in-hospital procurement. It has decreased the cost per donor from \$7,000 to under \$4,000 over 3 years,

compared to approximately \$20,000 in the hospital. It was first in the nation in lungs transplanted in 2014 and second in 2015; second in kidneys in 2015, seventh for livers in 2015, and top 25% for both hearts and pancreata in 2015. Because of this tremendous work, MTS was the nonprofit 2015 Baldrige Award recipient.

Mr. Chairman, these are only a few instances of the benefits my district and the State of Missouri have received from the Baldrige Program. And these successes are not unique to Missouri. The program has a nationwide presence that is improving competitiveness in all fifty states and enhancing the quality of life of citizens everywhere. Members of the Committee have constituents who are currently benefitting from Baldrige and will continue to do so if we can restore the public funding to this public-private partnership. I reiterate my earlier point that these public funds will be used to pay salaries and expenses for public employees at NIST. The Baldrige Foundation will continue to contribute private endowment funds for the continued success of the Baldrige Program, but Congress should not expect this private entity to pay the salaries of federal employees. I urge you and the subcommittee to include this bipartisan request of \$7,500,000 for the Baldrige Performance Excellence Program & NIST's Baldrige Cybersecurity Excellence Program initiative. If funding from the federal government - the Baldrige Foundation's public partner - is not restored, the Baldrige Program cannot be sustained. Eliminating Baldrige will result in:

- Loss of the Baldrige Criteria, the world's leading resource for achieving organizational improvement and excellence.
- Closing down the network of more than 30 independent state and regional Baldrige-based nonprofit programs. These grassroots-level programs rely on the Baldrige Program for the Criteria, training materials, case studies, evaluation software, and technical assistance. They also serve as the feeder system for the national program.
- Loss of Baldrige leadership and executive education programs. These programs regularly rank in the top ten and received the first-place award in the government and military category of the Leadership 500 Excellence Awards for 2014 and 2015. The Baldrige Fellows Program is considered the best professional development program in the federal government.
- Loss of access to Baldrige products and services for local, state and federal agencies, small businesses, start-ups, and health care associations that operate their own Baldrige-based improvement and accreditation programs.
- Loss of the newly formed Communities of Excellence 2026 (COE2026) program - currently being piloted in several communities across the nation. This community-based initiative is providing the resources needed to improve government, healthcare, education and business at the local-level using the Baldrige Framework.
- Discounting the achievement of 109 Baldrige Award recipients which have, at their own expense, made over 55,000 presentations to other U.S. organizations to help share their role-model processes and results.

For just a small investment, we can ensure that the Baldrige Excellence Program will continue to raise the standards of excellence in health care, business, and education, while also working to enhance our nation's cybersecurity. Thank you Mr. Chairman.



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Testimony of the Genetics Society of America  
 IN SUPPORT of increased funding for the National Science Foundation

Before the House Committee on Appropriations  
 Subcommittee on Commerce, Justice, Science, and Related Agencies

Submitted March 24, 2016

Thank you for the opportunity for the Genetics Society of America (GSA) to provide our perspective on the fiscal year (FY) 2017 appropriations for the National Science Foundation (NSF). GSA recommends a minimum of \$7.96 billion for NSF to support fundamental research across the nation.

GSA is a professional scientific society with more than 5,500 members from all 50 states working to deepen our understanding of the living world by advancing the field of genetics, from the molecular to the population level. While NSF provides 24% of all federal research for sciences, its contributions comprise 68% of the total federal investment in non-biomedical biology—including genetics research.<sup>1</sup> Members of our community rely on support from NSF to answer fundamental research questions. This is especially true for our members whose line of scientific inquiry does not have a foreseeable health application, but fits directly into NSF's mission to "promote the progress of science."

Fundamental research supported by the NSF has led to ground-breaking discoveries in our field and beyond. For example, research into the mechanisms of bacterial immunity funded by NSF led to the development of CRISPR/Cas9, the breakthrough technology which has accelerated the potential for gene editing.<sup>2</sup> As a result, researchers now have an unprecedented ability to study biological processes at the molecular level in a growing array of experimental systems and a new universe for biotechnological applications is now open for exploration. In another example, results from genetics research on the decline of bee colonies—which are a crucial pollinator for U.S. crops—will be implemented to create new management and breeding strategies to ensure that bee populations are maintained.<sup>3</sup> This

<sup>1</sup> NSF FY 2015 Budget Request to Congress. <http://www.nsf.gov/about/budget/fy2017>

<sup>2</sup> [http://www.nsf.gov/discoveries/disc\\_summ.jsp?cntn\\_id=134286&org=BIO](http://www.nsf.gov/discoveries/disc_summ.jsp?cntn_id=134286&org=BIO)

<sup>3</sup> [http://www.nsf.gov/discoveries/disc\\_summ.jsp?cntn\\_id=131953](http://www.nsf.gov/discoveries/disc_summ.jsp?cntn_id=131953)

research investment could prevent threats to food security and billions of dollars in losses in agricultural production.

Sustainable funding for the National Science Foundation is critical to ensure that these types of investigator-initiated projects, which have implications for society at large, continue to be supported. If the full funding request of \$7.96 billion is appropriated, the agency will be able to increase its success rate for investigator-initiated grants to 23%, corresponding to 800 new projects, any number of which could lead to the next great scientific innovation.

We also wish to emphasize the importance of sustainable support for research infrastructure. Biological databases, stock centers, and other shared research resources are essential for maintaining consistency across different research laboratories and are vital to scientists nationwide. For example, genomic databases speed innovation by providing accelerated access to well-curated data that can be used to validate new techniques. They also serve as searchable data repositories that allow scientists to connect their research findings and identify collaborators rapidly. Further, research databases function as a central place for data sharing, improving research transparency, and positively impacting research reproducibility. We believe that sustained public support for these community resources is essential and allows them to operate on an open access model, thus assuring that all researchers have the tools they need for discovery.

A significant fraction of the GSA membership are trainees—undergraduates, graduate students and postdoctoral scholars—who are concerned about the future of research funding and its implications for their careers. In 2015, 350,000 senior researchers, postdocs, graduate, and undergraduate students were funded directly through the NSF.<sup>1</sup> The requested increase in the agency's budget would allow 20,600 more scientists to be positively impacted by agency funds.<sup>1</sup> Such an increase would ensure that graduate students and postdocs remain in research careers, making strides in science and technology that will allow the U.S. to remain a world leader in STEM advances.

Finally, we would like to emphasize our support for the NSF's existing practice of setting priorities for research investments through engagement with the scientific community including the National Science Board, National Academy of Sciences, and other advisory bodies. The Genetics Society of America supports the merit review process of the NSF to select the most promising research and to enable the foundation to have flexibility to use its appropriation to pursue promising opportunities across the breadth of its mission.



We appreciate the opportunity to provide input into your deliberations about NSF appropriations. We are happy to provide any additional information about the impact of NSF funding on our community and the advancement of genetics research. Please contact GSA's Executive Director, Adam P. Fagen, PhD ([AFagen@genetics-gsa.org](mailto:AFagen@genetics-gsa.org)) or GSA's Policy and Communications Manager, Chloe N. Poston, PhD ([CPoston@genetics-gsa.org](mailto:CPoston@genetics-gsa.org)) with any questions.



Genetics Society of America

**ABOUT GSA:** Founded in 1931, the *Genetics Society of America* (GSA) is a professional scientific society with more than 5,500 members worldwide working to deepen our understanding of the living world by advancing the field of genetics, from the molecular to the population level. GSA promotes research and fosters communication through a number of GSA-sponsored conferences including regular meetings that

focus on particular model organisms. GSA publishes two peer-edited scholarly journals: *GENETICS*, which has published high quality original research across the breadth of the field since 1916, and *G3: Genes|Genomes|Genetics*, an open-access journal launched in 2011 to disseminate high quality foundational research in genetics and genomics. The Society also has a deep commitment to education and fostering the next generation of scholars in the field—as well as helping to enhance public understanding of genetics and model organism research. For more information about GSA, please visit [www.genetics-gsa.org](http://www.genetics-gsa.org). Also follow GSA on Facebook at [facebook.com/GeneticsGSA](https://facebook.com/GeneticsGSA) and on Twitter [@GeneticsGSA](https://twitter.com/GeneticsGSA).



## National Association of Marine Laboratories

Testimony for the Record  
 Michael De Luca  
 President, National Association of Marine Laboratories  
 Before the  
 Subcommittee on Commerce, Justice, and Science, and Related Agencies  
 Committee on Appropriations  
 House of Representatives  
 Washington, D.C.  
 March 25, 2016

The National Association of Marine Laboratories (NAML) is pleased to submit testimony to the Subcommittee with a series of recommendations that we believe would strengthen the Nation's research and education enterprise – particularly as it relates to our oceans, coasts and Great Lakes.

NAML is a nonprofit organization representing the ocean, coastal and Great Lakes interests of member laboratories that employ thousands of scientists, engineers and professionals nationwide. NAML labs conduct high quality research and education in the natural and social sciences and translate that science to improve decision-making on important issues facing our country. In setting NAML's priorities, NAML recognizes the importance of the federal investment in the geosciences and related disciplines as contributory factors to the Nation's economic and national security, and public safety. NAML strongly supports two important reports from the National Academy of Sciences. They are: *Sea Change: 2015-2025 Decadal Survey of Ocean Sciences (DSOS)*; and *Enhancing the Value and Sustainability of Field Stations and Marine Laboratories in the 21<sup>st</sup> Century*. Specifically, NAML supports:

- Enhancing research, education and public engagement at marine labs for the continued development of the nation's workforce, expansion of opportunities for active learning and collaborative research, and improved public engagement;
- Increasing support for competitive, merit-based ocean, coastal, and Great Lakes research and education from relevant federal agencies to address research priorities and agency mission priorities; and
- Promoting a network of advanced connectivity among Federal and non-Federal laboratories that strengthens the Nation's research and education enterprise – including advanced cyber infrastructure, integration of environmental observing systems, and the co-location of federal scientists and infrastructure at NAML facilities.

### **Oceans, Coasts and Great Lakes – Vital for Economic Growth and the Well-being of the Nation**

Six economic sectors of the U.S. economy depend on the oceans, coasts, and Great Lakes, which provide an important and resilient part of the national economy: including marine construction; living resources; offshore mineral extraction; ship and boat building; tourism and recreation; and marine transportation. According to NOAA, in 2012, the ocean economy accounted for 147,000 business establishments, 2.9 million employees, \$113 billion in wages, and \$343 billion in gross domestic product. In 2012, the ocean economy's contribution to gross domestic product grew by 10.5 percent - more than four times as fast as the U.S. economy as a whole (which grew by 2.5 percent). During the same year, employment in the ocean economy increased 3.8 percent (adding 108,000 jobs). This was twice the national average employment growth of 1.8 percent.

Programs such as NOAA's Sea Grant program, NSF's geoscience and biological sciences research programs including the Field Stations and Marine Laboratories program, NOAA's National Estuarine Research Reserve System, ocean observing and education programs at NSF and NOAA, and other agencies' national estuaries and other water-related programs all contribute to either the continued



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economic development of our coastal economies and/or the improved management of coastal and marine natural resources.

### **Research and Education: Commitment to Innovation**

Innovation in the form of new goods, services, or processes builds new knowledge and technology, contributes to national competitiveness, improves living standards, and furthers social welfare. Research and development is a major driver of innovation. R&D expenditures indicate the priority given to advancing science and technology relative to other national goals.

According to the latest data, the U.S. science and engineering (S&E) enterprise still leads the world. The United States invests the most in research and development (R&D), produces the most advanced degrees in science and engineering and high-impact scientific publications, and remains the largest provider of information, financial, and business services. However, Southeast, South, and East Asia continue to rapidly ascend in many aspects of S&E. The region now accounts for 40 percent of global R&D, with China as the stand-out as it continues to strengthen its global S&E capacity. The National Science Board's (NSB) *Science and Engineering Indicators 2016 (Indicators)* report highlights that China, South Korea and India are investing heavily in R&D and in developing a well-educated workforce skilled in science and engineering. *Indicators 2016* makes it clear that while the United States continues to lead in a variety of metrics, it exists in an increasingly multi-polar world for S&E that revolves around the creation and use of knowledge and technology.

At the same time that China and other Asian nations have continued to increase their R&D investments, the United States' longstanding commitment to federal government-funded R&D is declining. Federal obligations for the total of R&D and R&D plant were \$129 billion in FY 2008, \$145 billion in FY 2009, and \$147 billion in FY 2010. But the years thereafter have been mostly marked by funding declines: FYs 2011 and 2012 were down \$6–\$7 billion from the FY 2010 peak and then declined further to \$127 billion in FY 2013. In FY 2014, the total increased to \$131 billion. Nonetheless, the drop from the FY 2010 level to that in FY 2014 is a current dollar decline of 11%—and when inflation is factored in, it is steeper still, at 17%. Since the Great Recession, substantial, real R&D growth annually -- ahead of the pace of U.S. GDP -- has not returned. Inflation-adjusted growth in total U.S. R&D averaged only 0.8 percent annually over the 2008-13 period, behind the 1.2 percent annual average for U.S. GDP.

NAML believes the nation is faced with a widening gap between the actual level of federal funding for research and education and what the investment needs to be if the U.S. is to remain the world's innovation leader. NAML believes the nation needs to increase its investments in research and education to develop the ideas, the people, and the innovations that power the nation's economy, create jobs, improve health, and strengthen our national security, ensuring the U.S. maintains its role as a global leader.

### **National Science Foundation**

NSF's annual budget represents 25% of the total federal budget for basic research conducted at U.S. colleges and universities, and this share increases to 60 percent when medical research is excluded. In many fields NSF is the primary source of federal academic support. For example, NSF provides 61% of all federal support for basic research at academic institutions in the environmental sciences and 66% in biology (excluding the biomedical sciences). Although many federal agencies contribute to ocean, coastal, and Great Lakes research and education, NSF provides the broadest base of support, including funding for research in physical, biological, and chemical oceanography and marine geology and geophysics, and the development, implementation, and operational support for ocean, coastal, and Great Lakes research infrastructure. Research in ocean and coastal areas is supported via a highly competitive, merit-based process through a variety of modes of support at NAML laboratories involving individual investigators,



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small interdisciplinary teams of researchers and students, and large collaborative efforts integrating several laboratories.

NAML strongly supports robust funding for NSF particularly in the geo and biological sciences. Since FY 2011, despite an increase of nearly 10% to the NSF research and related account, funding for the geosciences has remained nearly flat. This has exacerbated the budgetary pressures on core research programs and the support for infrastructure throughout the directorate and as specifically addressed in the Decadal Study on Ocean Sciences (*DSOS*). The FY 2017 NSF budget request contains a proposed 6% increase for both the geosciences and the biological sciences, with a 6.5% increase for NSF's entire research budget. NAML strongly supports this requested investment in research and education through NSF.

Research emphases at NSF should reflect the priority science questions contained in *DSOS*. NSF's support for ocean research infrastructure should be realigned with these research priorities. NAML is particularly supportive of the creation of new research networks that connect NAML laboratories and terrestrial field stations in ways that would enhance other ecosystem networks (e.g., LTERs) supported by NSF. NAML embraces this and other recommendations, which stem, in part, from *Enhancing the Value and Sustainability of Field Stations and Marine Laboratories in the 21<sup>st</sup> Century*.

NAML notes the increasing share of NSF's division of ocean science's funding to support facilities and infrastructure, is approaching 50% of the total division's budget. This is up substantially from the historical 40% share. Advanced infrastructure, while expensive, is essential for the field to move forward. However, the support for infrastructure must be balanced with the need to support individual investigators – particularly young investigators – with the resources needed for high quality research activities. The *DSOS* considers marine laboratories and field stations **critical** for the research priorities related to coastal and estuarine oceans, biodiversity and marine ecosystems, and marine food webs. NAML endorses the recommendations of *DSOS* including:

- To sustain a robust ocean science community, holistic fiscal planning is necessary to maintain a balance of investments between core research programs and infrastructure. To maintain a resolute focus on sustaining core research programs during flat or declining budgets, NSF should strive to control operating costs of its major infrastructure programs over the next five years.
- NSF should reconsider whether the current regional class research vessels (RCRV) design is aligned with scientific needs and is cost effective in terms of long-term O&M pressures, and after doing so, should act accordingly.
- NSF should expand its partnership capabilities with other federal agencies and international partners, particularly with regard to shared community research priorities (e.g., climate change, ocean acidification, hypoxia, HABs, etc.).

### National Oceanic and Atmospheric Administration

One of NOAA's key priorities is providing information and services to make communities more resilient to coastal hazards. America's coastal communities and shorelines are facing escalating risks from changes in storm intensity, precipitation, flooding, rising sea levels, and ocean ecosystems, as well as from earthquakes and tsunamis that can result in dramatic human and economic losses. Increasing population density along the coast will further intensify pressures on ecologically and economically important areas, and put more people at risk. Rising sea level can further escalate the costs and risks of inundation events. A study by the National Institute of Building Sciences on Federal hazard mitigation grants estimated that \$1 spent on hazard mitigation potentially leads to avoidance of \$4 in disaster relief



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costs and lost Federal tax revenue. Smartly investing in resilience strategies and programs will reduce the economic impacts of these hazards and improve national economic security. Similarly, the Great Lakes region boasts a massive geographic footprint, and is a major driver of the North American economy. With economic output of \$4.7 trillion in 2011, the region accounts for 28% of combined Canadian and U.S. economic activity. By comparison, the region's output ranks ahead of Germany, France, Brazil and the U.K., and it would rank as the fourth largest economy in the world if it were a country, behind only the U.S., China and Japan. Continued investments will be required to modernize the nation's critical infrastructure in the very near future. This represents an opportunity to incorporate green infrastructure materials and strategies into communication, transportation, water supply and other critical systems. Continued support for NOAA's coastal programs will be necessary to ensure that these systems are resilient to extreme weather, natural disasters and other hazards. Comprehensive resilience planning will help protect coastal communities and resources from the effects of hazards and land-based pollution to vulnerable ecosystems by addressing competing uses, improving water quality and fostering integrated management for sustainable uses. Geospatial services will support communities, navigation and economic efficiency with accurate, useful characterizations, charts and maps, and assessment and decision support tools. NOAA programs and services will help build capacity among coastal decision makers to adaptively manage coastal communities and ecosystems with the best natural and social science available. Resilient coastal communities and economies cannot be achieved without strong partnerships. NOAA should increase its outreach to and usage of NAML laboratories by increasing support of *existing programs* before embarking on the establishment of new, potentially duplicative, programs.

NAML strongly supports recommendations that call for priority support for NOAA extramural programs. These include: the National Sea Grant College (NSGC) Program; Office for Coastal Management (OCM); Aquaculture Initiatives; Prescott Marine Mammal Program; Highly Migratory Shark Fishery Research Program; NOAA Cooperative and Joint Institutes; the Integrated Ocean Observing Systems; NOAA's Center for Sponsored Coastal Ocean Research harmful algal bloom, hypoxia, and ecological forecasting initiatives; the National Estuarine Research Reserve System (NERRS); the National Marine Sanctuary Program; and NOAA's Office of Education. NOAA should also join with NIH and NSF to revitalize its support for the Oceans and Human Health research program. Extramural funding enables NOAA to leverage its R&D and operational investments with the resources of the nation's leading university scientists resulting in greater and faster scientific advances at lower costs. A predictable and reliable partnership with the extramural research community is critical to NOAA's long-term success.

As available resources become scarcer and major program reorganizations may be considered, NOAA should expand its efforts to co-locate agency research staff and infrastructure at non-Federal marine laboratories. Such actions will not only result in significant cost savings, but also will achieve a greater return for its investment and increase scientific collaborations and productivity.

NAML also continues to express concern with NOAA proposals contained in appropriation language requests that would enable NOAA to compete with non-federal and private entities for private sector support (See proposed Sec 109 on p. 219 of the *Appendix to the Budget of the U.S. Government for FY 2017*). NOAA should adhere to its public-private partnership policy, which recognizes the distinct, yet cooperative, roles of the public and private sectors as it relates to environmental information.

The NOAA budget request for FY 2017 includes requested increases for OCM and the Coastal Science and Assessment, including the Competitive Research program that supports harmful algal blooms, hypoxia, and the coastal resilience management grants program which NAML is pleased to support. NAML is concerned, however, with proposed reductions in oceans, coastal, and Great Lakes research - including the National Sea Grant College Program, the Ocean, Coastal, and Great Lakes Cooperative Institutes and Ocean Exploration and Research.



## National Association of Marine Laboratories

### National Aeronautics and Space Administration

Part of NASA's mission is to develop an understanding of the total Earth system and the effects of natural and human-induced changes on the global environment. Oceans play a major role in influencing changes in the world's climate and weather. Long-term ocean data from satellites make it possible to employ modeling techniques for global mapping of seasonal changes in ocean surface topography, currents, waves, winds, phytoplankton content, sea-ice extent, rainfall, sunlight reaching the sea, and sea surface temperature. Studying these patterns at a global scale can help forecast and mitigate the effects of floods and drought. Ocean observing satellite imagery informs us about the most fundamental climate changes. Satellite data have improved forecasting model capabilities to predict events such as El Niño and other global and regional climate cycles. Expanding NASA extramural support will further develop the ability to better predict ocean phenomena, particularly those impacting coastal environments (e.g. harmful algal blooms, hypoxia, ocean acidification).

### Education, Diversity and an Ocean Literate America

The U.S. continues to be at risk with respect to student achievement in science, technology, engineering and math among industrialized nations, as well as, emerging industrializing nations. As reported in *Indicators*: in the international arena, the Program for International Student Assessment data show that the U.S. average mathematics and science literacy scores are below the average scores for all developed countries, and the United States has substantially fewer high scores and more low scores than other developed countries. U.S. students' average mathematics score of 481 in 2012 was lower than the average score for all developed countries, 501. The average science literacy score for U.S. students in 2012 was 497, lower than the average science score of 511 for all developed countries.

NAML continues to believe it is critically important that we improve ocean literacy and workforce development among all sectors of our nation. Place-based networks such as NAML offer unique opportunities to provide hands-on training in diverse field settings with advanced sampling and sensing technologies. The importance of marine laboratories in support of coastal states' environmental literacy plans is essential in developing a literate public. Investment is needed today in coastal, ocean and Great Lakes education programs at NAML laboratories that support formal and informal learning at all age levels, in all disciplines and for all Americans.

NAML supports the Administration's proposed \$7 billion investment in STEM education across the Federal Government – with its expansion of access to rigorous STEM courses, improving STEM teaching and support for active learning, and expansion of opportunities for all students in STEM education. NAML laboratories believe the mission agencies have a role in helping to educate and train the workforce they will need in the future to carry out their missions. Therefore, NAML strongly objects the proposed budget reductions to NOAA's education programs. NAML also continues to strongly support partnerships with Federal agencies to address the ocean education needs of the Nation. These include the NSF's Louis Stokes Alliance for Minority Participation, Research Experiences for Undergraduates and Research on Learning in Formal and Informal Settings programs; NOAA's Expanding Partnerships Program in the NOAA Education Office and Sea Grant's fellowships and K-12 STEM education programs; and EPA's Science to Achieve Results (STAR) Fellowship Program.

Thank you for the opportunity to submit this information for the FY 2017 appropriations process.



## Northwest Indian Fisheries Commission

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**WRITTEN TESTIMONY OF LORRAINE LOOMIS, CHAIR  
NORTHWEST INDIAN FISHERIES COMMISSION  
SUBMITTED TO THE HOUSE APPROPRIATIONS SUBCOMMITTEE ON  
COMMERCE, JUSTICE, SCIENCE AND RELATED AGENCIES  
ON THE FISCAL YEAR 2017 BUDGET FOR THE  
NATIONAL OCEANIC & ATMOSPHERIC ADMINISTRATION**

**March 31, 2016**

Mr. Chairman and members of the Subcommittee, my name is Lorraine Loomis and I am the Chair of the Northwest Indian Fisheries Commission (NWIFC). The NWIFC is comprised of the twenty tribes that are party to the *United States v. Washington*<sup>1</sup> (*U.S. v. Washington*). We are providing testimony for the record in support of funding for the National Oceanic and Atmospheric Administration (NOAA)/National Marine Fisheries Service (NMFS) for the Fiscal Year 2017 (FY17) appropriations.

### **SUMMARY OF FY17 APPROPRIATIONS REQUESTS**

- ❑ **\$110.0 million for the Pacific Coastal Salmon Recovery Fund (NOAA/NMFS)**
- ❑ **\$14.7 million for the Pacific Salmon Treaty, including \$3.0 million for the 2008 Chinook Salmon Agreement (NOAA/NMFS)**
- ❑ **\$20.3 million for the Mitchell Act Hatchery Programs (NOAA/NMFS)**

We are generally pleased with the President's FY17 Budget Request but much more needs to be done. The natural resources that we depend on are vital to our tribal communities, economies and jobs. The land and the many natural resources we depend on are a necessity for our communities to thrive.

The continued loss and degradation of the salmon habitat continues to hamper our salmon recovery efforts. The western Washington treaty tribes brought this concern to the federal government in our Treaty Rights at Risk (TRAR) initiative almost five years ago, which ultimately threatens our tribal treaty rights. The federal government has the obligation and authority to ensure both the recovery of salmon and the protection of tribal treaty rights. These constitutionally-protected treaties, the federal trust responsibility and extensive case law, including the *U.S. v. Washington* decision, all support the role of tribes as natural resource managers, both on and off reservation. The issues we put forth in our TRAR has been slow to create any change in the manner in which federal agencies operate. It has not been enough to change the trajectory of salmon recovery in our region from a negative to a positive direction.

Salmon has always been the foundation of tribal cultures, traditions and economies in western Washington. Wild salmon and their habitat continue to decline despite massive reductions in

<sup>1</sup> *United States v. Washington*, Boldt Decision (1974) reaffirmed Western Washington Tribes' treaty fishing rights.

harvest and a significant investment in salmon recovery and habitat restoration. However, fulfilling these federal obligations is not an option and these investments must continue as we work to recover the salmon populations.

In Washington State, we have developed a successful co-management partnership between the federal, state and tribal governments. Tribes seize every opportunity to coordinate with other governments and non-governmental entities to avoid duplication, maximize positive impacts, and emphasize the application of ecosystem-based management. This collaboration has helped us to deal with many problems, and as sovereign nations, we will continue to participate in resource recovery and habitat restoration with the state of Washington and the federal government because we understand the great value of such cooperation.

Hatchery production also continues to be a critical component in fulfilling these treaty-reserved rights and play a vital role in the management of our fisheries. In addition to our habitat concerns, the hatchery systems in the state of Washington are under attack by third party litigation due to the lack of approved Hatchery and Genetic Management Plans (HGMPs) under the ESA. The problem will continue until the National Marine Fisheries Service and U.S Fish and Wildlife Service have completed their ESA determinations. Resources and immediate action is needed to address the current backlog of HGMPs so that our communities are not further impacted by loss of their fisheries.

To address these many concerns adequate funding is necessary for hatchery production and salmon habitat restoration. The programs we support provide the necessary salmon production and assists tribes in the implementation of salmon recovery plans that moves us in the direction of achieving the recovery goals, which is a direct request in our TRAR initiative. As Congress considers the FY17 budget, we ask you to consider our requests that are further described below.

### **JUSTIFICATION OF REQUESTS**

#### **• Provide \$110.0 million for NOAA Pacific Coastal Salmon Recovery Fund**

We respectfully request \$110.0 million, an increase of \$45.0 million over the President's FY17 request of \$65.0 million. The FY16 appropriations provided a total of \$65.0 million. These funds have decreased from the peak of \$110.0 million in FY02. We continue to support the original Congressional intent of these funds that would enable the federal government to fulfill its obligations to salmon recovery and the treaty fishing rights of the tribes.

The PCSRF is a multi-state, multi-tribe program established by Congress in FY00 with a primary goal to help recover wild salmon throughout the Pacific coast region. The PCSRF supports projects that restore, conserve and protect Pacific salmon and steelhead and their habitats. PCSRF is making a significant contribution to the recovery of wild salmon throughout the region by financially supporting and leveraging local and regional efforts. Salmon restoration projects not only benefits fish populations and their habitat but provides much needed jobs for the local communities.



The tribes' overall goal in the PCSRF program is to restore wild salmon populations while the key objective is to protect and restore important habitat in Puget Sound and along the Washington coast. This is essential for western Washington tribes to exercise their treaty-reserved fishing rights consistent with *U.S. v. Washington* and *Hoh v. Baldrige*<sup>2</sup> and also promotes the recovery of ESA listed species and other salmon populations. The tribes have used these funds to support the scientific salmon recovery approach that makes this program so unique and important.

These funds support policy and technical capacities within tribal resources management to plan, implement, and monitor recovery activities. In addition to watershed restoration and salmon recovery work they also help fund fish hatchery reform efforts to allow for the exercise of tribal treaty fishing rights. Hatchery projects are a critical component of salmon recovery as they help reduce the impacts of listed stocks. It is for these reasons that the tribes strongly support the PCSRF.

- **Provide \$14.7 million for NOAA Pacific Salmon Treaty, including \$3.0 million associated with the 2008 Chinook Salmon Agreement**

We support the Pacific Salmon Commission (PSC)/U.S. Section's request of \$14.7 million, an increase of \$3.4 million over the President's FY17 request of \$11.3 million. The FY16 appropriations provided a total of \$11.3 million. We also support as part of their request \$1.5 million for the Puget Sound Critical Stock Augmentation Program and \$1.5 million for the Coded Wire Tag (CWT) Program as required by the 2008 PST Chinook Annex Agreement.

The Puget Sound Critical Stock Augmentation Program provides funding for the operation and maintenance costs for the hatchery augmentation programs established for Dungeness, Stillaguamish, and Nooksack Chinook. These hatchery efforts were initiated in connection with the 2008 Chinook Agreement of the US/Canada Pacific Salmon Treaty (PST) as the conservation needs of these populations could not be met by harvest restriction actions alone. The CWT funding allows for continued maintenance and efficiency improvements of the coast-wide CWT program. This is essential for the sustainability and management of our fisheries resources. Currently there is not enough funding allocated to carry out the requirements of the PST, which causes the PSC to not be able to perform all of its responsibilities required in the treaty and its Chinook and coho annexes.

The PST was implemented in 1985 through the cooperative efforts of tribal, state, U.S. and Canadian governments, and sport and commercial fishing interests. The PSC was created by the United States and Canada to implement the treaty, which was most recently updated in 2008. The PSC establishes fishery regimes, develops management recommendations, assesses each country's performance and compliance with the treaty, and is the forum for all entities to work towards reaching an agreement on mutual fisheries issues.

Adult salmon returning to most western Washington streams migrate through U.S. and Canadian waters and are harvested by fisherman from both countries. For years, there were no restrictions

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<sup>2</sup> *Hoh v. Baldrige* - A federal court ruling that required fisheries management on a river-by-river basis.

on the interception of returning salmon by fishermen of neighboring countries. The 2008 update of the treaty gave additional protection to weak runs of Chinook salmon returning to Puget Sound rivers. The update also provided compensation to Alaskan fishermen for lost fishing opportunities, while also funding habitat restoration in the Puget Sound region.

- **Provide \$20.3 million for NOAA Mitchell Act Hatchery Programs**

We support the President's FY17 request of \$20.3 million for the Mitchell Act Hatchery Programs. The FY16 appropriations provided a total of \$20.2 million. Funding is provided for the operation and maintenance of hatcheries that release between 50 and 60 million juvenile salmon and steelhead in Oregon and Washington. This program has historically provided fish production for tribal treaty and non-tribal commercial and recreational fisheries in the Columbia River, and also contributes to ocean fisheries from Northern California to Southeast Alaska. Overall production from these hatcheries has been reduced from more than 110 million to fewer than 60 million fish due to inadequate funding. The Mitchell Act hatchery production is intended to mitigate for fish and habitat loss caused by the federal hydropower dam system on the Columbia River and provides important economic and cultural benefits.

Funding is provided for improving the Mitchell Act Hatchery Programs to ensure that both conservation and harvest goals are met while contributing to sustainable fisheries and meeting the tribal treaty obligation. It is especially important to us in that they provide significant fish production for harvest opportunities for tribal treaty fisheries along the Washington coast. Providing adequate funding to maintain the current production levels from the Mitchell Act hatcheries on the Columbia River is important as this production not only supports coastal salmon fisheries but dampens the impact of Canadian and Alaskan ocean fisheries under the terms of the PST Chinook Annex on Puget Sound and coastal stocks.

Substantial changes have been made, and will continue to be required of the Mitchell Act hatcheries, due to the application of the ESA throughout the Columbia Basin. Mitchell Act hatcheries are currently implementing hatchery reform efforts to ensure they are operated using the best scientific principles that will contribute to sustainable fisheries and the recovery of naturally spawning populations of salmon and steelhead. Adequate funding will allow these facilities to be retrofitted to meet current ESA standards as identified through the hatchery reform process.

## **CONCLUSION**

The treaties and the treaty-reserved right to harvest are the supreme law of the land under the U.S. Constitution. It is critically important for Congress and the federal government to do even more to coordinate their efforts with state and tribal governments. We need your continued support in upholding the treaty obligations and fulfilling the trust responsibility of those treaties in order for tribes to be successful.

We respectfully urge you to continue to support our efforts to protect and restore our natural resources that in turn will provide for thriving economies. Thank you.



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Testimony of the  
**Federation of American Societies for Experimental Biology**  
On  
**FY 2017 Appropriations for the National Science Foundation**

Submitted to the  
**House Committee on Appropriations**  
**Subcommittee on Commerce, Justice, Science, and Related Agencies**

**Representative John Culberson, Chairman**  
**Representative Mike Honda, Acting Ranking Member**

**The Federation of American Societies for Experimental Biology (FASEB) respectfully requests a fiscal year (FY) 2017 appropriation of a minimum of \$7.96 billion for the National Science Foundation.** This would represent a first step in ensuring a sustainable, competitive basic research enterprise.

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The American Physiological Society • American Society for Biochemistry and Molecular Biology • American Society for Pharmacology and Experimental Therapeutics  
American Society for Investigative Pathology • American Society for Nutrition • The American Association of Immunologists • American Association of Anatomists  
The Protein Society • Society for Developmental Biology • American Peptide Society • Association of Biomolecular Resource Facilities  
The American Society for Bone and Mineral Research • American Society for Clinical Investigation • Society for the Study of Reproduction • The Teratology Society  
The Endocrine Society • The American Society of Human Genetics • International Society for Computational Biology • American College of Sports Medicine  
Biomedical Engineering Society • Genetics Society of America • American Federation for Medical Research • The Histochemical Society • Society for Pediatric Research  
Society for Glycobiology • Association for Molecular Pathology • Society for Redox Biology and Medicine • Society For Experimental Biology and Medicine  
American Aging Association (AGE) • U.S. Human Proteome Organization (US HUPC)

The Federation of American Societies for Experimental Biology (FASEB) is composed of 30 societies with 125,000 members, making it the largest coalition of biomedical research associations in the United States. FASEB enhances the ability of scientists and engineers to improve health, well-being, and productivity through research and is recognized as the policy voice of biological and biomedical researchers.

The National Science Foundation (NSF) is the only federal agency supporting discovery-oriented research in all fields of science and engineering and is the major source of funding for mathematics, computer science, and social sciences research. NSF's mission is "to promote the progress of science; to advance the national health, prosperity, and welfare; to secure the national defense..." More than 200 Nobel Laureates have received NSF support throughout their careers. The agency's fellowship programs educate and train thousands of graduate students pursuing advanced degrees in science, technology, engineering, and mathematics, ensuring a robust and competitive workforce. Funding is distributed annually through merit-based reviews, to 200,000 scientists, engineers, educators, and pre- and post-doctoral students across all 50 states. NSF supports approximately 24 percent of all federally-supported basic research and awards an average of 11,500 new competitive awards per year.

To sustain the nation's leadership in science, the research community relies on NSF to provide access to major research facilities, mid-scale instrumentation, advanced computational and data resources, and cyberinfrastructure. Large-scale NSF facilities fund equipment that can propel entire fields of research forward, maximizing our investment and promoting the use of shared resources. NSF is also responsible for helping to address a new set of challenges in managing, storing, and providing access to the explosion of data currently being produced by researchers.

Research supported by NSF has led to significant advances in nanotechnology, leading to the creation of new devices and materials with remarkably useful and versatile properties. Today, many private sector companies are pursuing the development of nanoscale products for commercial uses. NSF has also funded research that has created products used in everyday life such as bar codes and computer-aided design (CAD) software. In addition, research funded by NSF helped develop Doppler radar enabling meteorologists to forecast the location and severity of storms with greater accuracy.

Recent highlights from NSF-funded research that address important problems related to the conditions of humans, animals, the environment include:

- **CRISPR-Cas9 and Gene Editing:** Basic research into the mechanisms of bacterial immunity has opened a new frontier in biotechnology. The CRISPR-Cas9 system, pioneered by researchers at institutions including the University of California, Berkeley, allows biologists to make precise, targeted changes to individual genes in the genomes of a myriad of organisms and cell-types. This not only gives researchers an unprecedented ability to study biological processes at the molecular level, but opens up a new universe of potential therapeutics and biotechnological applications.<sup>1</sup>

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<sup>1</sup> [http://www.nsf.gov/discoveries/disc\\_summ.jsp?cntn\\_id=134286&org=BIO](http://www.nsf.gov/discoveries/disc_summ.jsp?cntn_id=134286&org=BIO)

- **Studying Amphibians to Understand the Microbiome and Disease:** Researchers at the University of California-Santa Barbara have demonstrated that a fungal pathogen responsible for massive declines in amphibian species changes the microbiome that normally resides on the animals' skin. Using next-generation DNA sequencing to document shifts in skin bacteria of frog communities during pathogen outbreaks, the researchers discovered varying patterns of disease dynamics that may be related to tolerance or vulnerability to the pathogen. The results are important for developing responses to counter the mass extinction of amphibians worldwide, and may also have implications for studies of human health.<sup>2</sup>
- **Using Genetics to Address Colony Collapse Disorder:** Important commercial crops in the United States and throughout the world are pollinated by honey bees. However, over the last decade, there has been a drastic decline in bee populations, threatening food security and billions of dollars of agricultural production. By studying the African relatives of domestically raised bees, researchers at Pennsylvania State University are beginning to understand genetic and environmental factors that might allow bees to resist the agents that threaten them. This work may lead to new management and breeding strategies that will save this crucial pollinator.<sup>3</sup>
- **Understanding Variation in Tolerance to Oxygen Deprivation:** Oxygen deprivation is an important cause of disease and injury in humans, animals, and aquatic ecosystems. Some animals, such as painted turtles, are ideal models for understanding the limits of oxygen deprivation because they can naturally tolerate the condition. Comparative physiologists at Saint Louis University are using next-generation transcriptomic approaches to identify the genes underlying the turtle's ability to survive without oxygen. Their aim is to uncover new targets for interventions that could reduce or eliminate tissue injury in more vulnerable species.<sup>4</sup>
- **Mathematical Modeling of Blood Flow to Understand Glaucoma:** Researchers at Indiana University are developing a mathematical model of ocular blood flow in order to study glaucoma, a disease of the optic nerve and a leading cause of blindness. By using new, quantitative approaches, this work has the potential to improve the interpretation of clinical eye measurements, not only for the diagnosis and treatment of glaucoma, but also for other vascular diseases that present systems in the eye such as diabetes, hypertension, and atherosclerosis.<sup>5</sup>
- **Blocking the Transmission of Malaria:** Malaria, a parasitic infection transmitted by mosquitoes, is a scourge that affects millions of people globally each year. Biochemists at the University of Oklahoma have identified a protein in the mosquito digestive system that is critical for the transmission of the malarial parasite. With this insight, researchers

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<sup>2</sup> [http://www.nsf.gov/discoveries/disc\\_summ.jsp?cntn\\_id=133263&org=NSF](http://www.nsf.gov/discoveries/disc_summ.jsp?cntn_id=133263&org=NSF)

<sup>3</sup> [http://www.nsf.gov/discoveries/disc\\_summ.jsp?cntn\\_id=135470&org=BIO](http://www.nsf.gov/discoveries/disc_summ.jsp?cntn_id=135470&org=BIO)

<sup>4</sup> [https://www.nsf.gov/awardsearch/showAward?AWD\\_ID=1253939&HistoricalAwards=false](https://www.nsf.gov/awardsearch/showAward?AWD_ID=1253939&HistoricalAwards=false)

<sup>5</sup> [http://www.nsf.gov/awardsearch/showAward?AWD\\_ID=1224195&HistoricalAwards=false](http://www.nsf.gov/awardsearch/showAward?AWD_ID=1224195&HistoricalAwards=false)

hope to harness the activity of this protein in order to develop compounds that might block parasite uptake by mosquitoes and prevent further spread of the disease.<sup>6</sup>

- **Real-Time Imaging of Organs and Tissues:** Biomedical engineers at Washington University in St. Louis have developed a novel approach to biomedical imaging. This technique, which uses lasers to create miniscule changes in temperature in the object to be imaged, does not require the use of chemical agents, and thus can be used to visualize living material in its natural environment. Such new bioimaging technology will give researchers an unprecedented ability to visualize and understand myriad biological processes, and ultimately may give clinicians a powerful new diagnostic tool.<sup>7</sup>

### **Facilitating New Discoveries**

New research will be required to solve vexing problems facing the United States and the world. The breadth and diversity of NSF's mission makes the Foundation uniquely suited to pioneer bold, new scientific directions. Indeed, many of the most innovative ideas and interesting frontiers are interdisciplinary in nature, drawing upon concepts and expertise from several different scientific traditions. In this spirit, the NSF has become adept at leveraging its expertise both within and across units at the agency, and will continue to pursue new multi-directorate initiatives, such as the Innovations at the Nexus of Food, Water, and Energy investment.<sup>8</sup>

Despite this unprecedented level of scientific opportunity, the budget of NSF has increased only marginally over the last several years. This, coupled with the rising cost of research, has eroded the ability of the NSF to be a cornerstone of the America's scientific enterprise and restricted the Foundation's ability to train the next generation of scientists and engineers. What is required is a renewed commitment to NSF that puts the agency on a path of sustained, steady budget increases such that science may flourish and the nation may continue to benefit from the landmark discoveries and innovations enabled by NSF funding.

Providing NSF with a budget of \$7.96 billion (\$500 million above FY 2016 levels) would allow the agency to fund approximately 500 additional research grants at colleges, universities, and other research centers across the nation. Funding at this level is also consistent with a vision of predictable, sustained growth for NSF that has been proposed in past reauthorizations, such as the America Creating Opportunities to Meaningfully Promote Excellence in Technology, Education, and Science (COMPETES) Act of 2010.

**FASEB recommends a minimum of \$7.96 billion for NSF in FY 2017, as an important first step in ensuring a sustainable, competitive basic research enterprise.**

Thank you for the opportunity to offer our support and recommendations for NSF.

<sup>6</sup> [http://www.nsf.gov/discoveries/disc\\_summ.jsp?cntn\\_id=135733&org=BIO](http://www.nsf.gov/discoveries/disc_summ.jsp?cntn_id=135733&org=BIO)

<sup>7</sup> [http://www.nsf.gov/discoveries/disc\\_summ.jsp?cntn\\_id=135473&org=BIO](http://www.nsf.gov/discoveries/disc_summ.jsp?cntn_id=135473&org=BIO)

<sup>8</sup> <http://www.nsf.gov/pubs/2016/nsf16524/nsf16524.htm?org=NSF>

University Corporation for Atmospheric Research  
 Consortium for Ocean Leadership  
 Incorporated Research Institutions for Seismology  
 Lamont Doherty Earth Observatory  
 Columbia University  
 Woods Hole Oceanographic Institution  
 Scripps Institution of Oceanography  
 National Association of Marine Laboratories  
 Association of Public and Land-grant Universities  
 American Association of Petroleum Geologists  
 SRI International  
 University of California System  
 Texas A&M University  
 Oregon State University  
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 University of Nebraska-Lincoln  
 University of Massachusetts Dartmouth  
 Michigan Technological University  
 University of Hawaii at Manoa  
 University of North Carolina at Wilmington  
 University of Oklahoma  
 University of Rhode Island  
 University of Georgia  
 The University of North Carolina at Chapel Hill  
 Institute of Marine Sciences  
 Great Lakes WATER Institute, University of Wisconsin-Milwaukee School of Freshwater Sciences  
 Humboldt Marine and Coastal Science Institute, Humboldt State University  
 Moss Landing Marine Laboratories  
 Grice Marine Laboratory, College of Charleston  
 University of South Florida - College of Marine Science  
 Center for Marine Sciences and Technology - North Carolina State University  
 Louisiana Universities Marine Consortium  
 American Anthropological Association  
 Soil Science Society of America  
 Bigelow Laboratory for Ocean Sciences, Maine  
 Friday Harbor Laboratories, College of the Environment, University of Washington  
 American Geosciences Institute  
 National Association of Geoscience Teachers  
 Seismological Society of America  
 College of the Environment, University of Washington  
 Penn State University  
 Department of Geography and Meteorology, Valparaiso University  
 The College of Arts and Sciences, Valparaiso University  
 Metropolitan State University of Denver  
 Saint Louis University  
 Department of Earth & Planetary Sciences, The Johns Hopkins University  
 Oregon Institute of Marine Biology  
 University of Oregon  
 Annis Water Resources Institute - Grand Valley State University  
 The Institute of Earth, Ocean, and Atmospheric Sciences at Rutgers University  
 Whitney Laboratory for Marine Bioscience, University of Florida  
 Seahorse Key Marine Laboratory, University of Florida  
 Marine Science Research Institute-Jacksonville University  
 Galbraith Marine Lab, Eckerd College  
 Western Washington University, Shannon Point Marine Center  
 Belle Baruch Institute for Marine and Coastal Sciences, University of South Carolina  
 University of California, Davis

Testimony Regarding Fiscal Year 2017 Funding for  
 The National Science Foundation  
 Submitted to the  
 Subcommittee on Commerce, Justice, Science and Related  
 Agencies  
 Committee on Appropriations,  
 House of Representatives  
 March 25, 2016

Dear Mr. Chairman and Members of the Subcommittee, thank you for the opportunity to present testimony in support of strong and balanced funding for the National Science Foundation. This testimony is submitted on behalf of the organizations listed in the left margin on this and subsequent pages. They all support funding the National Science Foundation at \$8 billion in FY 2017 – including full funding for the geosciences portfolio of research and related national and user facilities within the NSF request.

We believe investing in NSF will support the kind of basic research and development investment that will prevent an innovation deficit and help ensure the United States maintains the world's most innovative, dynamic and vibrant economy. Robust federal investment in basic research and development has long proven key to accelerating our economy's productivity growth and much in the FY 2017 budget would help build on that progress. Increasing research investments in the earth, ocean, atmospheric and climate sciences – areas with incredible need and potential – are examples where this budget proposal seeks to address global problems with U.S.-led research that can also yield real economic benefits, national security, and public safety for our Nation.

**Geosciences Research and National Security**

On September 15, 2015, a distinguished group of former military and national security leaders said the following:

*“...we urge you to protect funding for NASA Earth science and NSF Geoscience programs. These programs are essential parts of a broader whole of government and whole of society effort to provide essential data about and better scientific understanding of global, regional, and local Earth processes. That essential data about better scientific understanding of the underlying science are critical to many strategic planning, strategy, and*

University of Maine  
 Michigan State University  
 Dauphin Island Sea Lab, Dauphin Island, Alabama  
 Desert Research Institute, Nevada  
 The University of Kansas  
 University of Minnesota  
 The Institute at Brown for Environment and Society, Brown University  
 The University of Texas at Austin  
 South Dakota State University  
 University of California at Irvine  
 American Association of Geographers  
 Hatfield Marine Science Center  
 Harbor Branch Oceanographic Institute-Florida  
 Atlantic University  
 Council on Undergraduate Research  
 The Weather Coalition  
 North Carolina A&T University  
 Sitka Sound Science Center, Sitka, Alaska  
 Romberg Tiburon Center for Environmental Studies, San Francisco State University  
 Bermuda Institute of Ocean Sciences, New York  
 University of Maryland Center for Environmental Science

*investment decisions in both the private and public sectors, very much including national security. From better understanding weather, wind patterns and intensity, changing global land cover, snow, ice and glacier melting, and seismic activity, to capturing new insights about ocean-atmosphere dynamics and changing ocean circulation, these...programs represent one of the pillars of our nation's environmental information supply chain. This critical but fragile chain begins with science and data and evolves into decision support products and tools that inform and protect our citizens, property, businesses, and interests around the world. [These programs] directly link to food, water, energy, and economic security, all of which are inherently tied to our national security."*

The national security implications are far reaching as they may exacerbate existing stressors, contributing to poverty, environmental degradation and political instability providing enabling environments for terrorist activity abroad. For example, the impacts of climate change on key economic sectors, such as agriculture and water, can have profound effects on food security, posing threats to overall stability.

On January 14, 2016, Robert Work, the Deputy Secretary of Defense issued DoD Directive 4715.21 that establishes departmental policy and responsibilities within DOD to assess and manage risks associated with the impacts of climate change. The policy statement in this directive says:

*"...The DoD must be able to adapt current and future operations to address the military. Mission planning and execution must include: a) identification and assessment of the effects of climate change on the DoD mission; b) taking those effects into consideration when developing plans and implementing procedures; and c) anticipating and managing any risks that develop as a result of climate change to build resilience..."*

DoD's ability to implement this new policy directive is dependent on the scientific information that comes out of the geosciences research supported by NSF and other agencies.

### **Geosciences and the Private Sector Commercial Weather Industry**

On June 5, 2015, the Chairman and Executive Officer of the Weather Company said the following about the economic importance of the geosciences and related disciplines:



*"...Research conducted through NSF's geosciences program, NASA's Earth Sciences program and NOAA's weather and climate research programs have enabled us, in partnership with these agencies, to inform citizens and businesses of weather and climate events in a tailored manner that enables them to be weather-ready and climate-smart. Cutting these investments...will have negative consequences on our economy and quality of life in the coming years. They are vital investments to maintain our leadership in environmental information and services."*

### **Geosciences and the Insurance Industry**

In a hearing before the Senate Environment and Public Works Committee in July of 2013 the President of the Reinsurance Association of America said the following about the importance of research in the geosciences to the economic viability of the insurance industry and those they insure:

*"...Our industry [the reinsurance industry] is science based. Blending the actuarial sciences with the natural sciences is critical in order to provide the public with resources to recover from natural events...Developing an understanding about climate and its impact on droughts, heat waves, the frequency and intensity of tropical hurricanes, thunderstorms and convective events, rising sea levels and storm surge, more extreme precipitation events and flooding is critical to our role in translating the interdependencies of weather, climate risk assessment and pricing..."*

### **Geosciences and the Private Sector Aquaculture Industry**

On May 8, 2015 Diane Pleschner-Steele, Executive Director of California Wetfish Producers Association, a major industry aquaculture organization in California said:

*"...NSF's Geoscience Directorate funds data collecting buoys that provide a long-term signal of increased ocean acidification among other measurements. These forecasts will be critical to maintain for both open-ocean aquaculture and important shellfish fisheries, as these industries are hugely important economically on both west and east coasts. Proposed cuts to the Geoscience Directorate put the data on which the seafood industry depends, and the domestic seafood-producing economy as a whole, at risk..."*

### **Research Underlying Fracking Technology Yields Economic Benefits**

Investment in the geosciences provided the fundamental understanding of geologic structures and processes necessary to utilize hydraulic fracturing (fracking) processes to release oil and gas from shale formations. The ability of U.S. companies to develop these natural resources is built upon decades of fundamental research and technology development in the earth sciences. According to a 2013 report from U.S. Chamber of Commerce's 21st Century Energy Institute, fracking has created a job boom even in states that don't actually have shale deposits, with 1.7 million jobs already created and a total of 3.5 million projected by 2035.

### **Geoscience Graduates – Source of Technical Talent for Energy and Environment Industry**

The geosciences research that NSF funds helps educate and train the next generation of geoscientists. According to the Bureau of Labor Statistics (BLS), there were a total of 296,963 geoscience jobs in 2012, and this number is expected to increase by 14% by 2022 to a total of 339,737 jobs. Approximately 143,000 geoscientists are expected to retire by 2022, but over the next decade, approximately 51,000 students will be graduating with their bachelor's, masters, or doctoral degrees in the geosciences. Therefore, according to the American Geosciences Institute's (AGI) *Status of the Geoscience Workforce Report 2014*, assuming minimal non-retirement attrition from the geoscience workforce, there is expected to be a deficit of approximately 135,000 geoscientists by 2022. Texas leads the nation in the number of geoscience undergraduates and graduate students enrolled within geoscience departments.

The AGI report, *Status of Recent Geoscience Graduates 2015*, shows a shift in hiring patterns for geoscience industries. For the first time in the report's history, an industry other than oil and gas hired the highest percentage of bachelor's graduates: environmental services. According to the report, approximately 40 percent of bachelor's graduates found a job in the environmental services industry, which includes fields such as environmental consulting and remediation of land assets such as water and soil. Sixteen percent of bachelor's graduates went on to find jobs in the oil and gas industry in 2015, down from 36 percent in 2014. Changing employment dynamics and record low oil prices have led the oil and gas industry to reduce employment opportunities. Nevertheless, 67 percent of master's graduates found jobs in the oil and gas industry, an increase from 59 percent in 2014. Other industries hiring geoscientists include: manufacturing or trade, construction, information technology services, and agriculture. NSF's support for the geosciences contributes significantly to the education and training of these individuals via NSF's programs in research, graduate student support, and undergraduate student support.

### **Conclusion**

It is important to appreciate that the NSF's investments in all fields of science and engineering -- including the geosciences -- have addressed important national and global challenges, spurred new economic sectors, and led to the development and implementation of advanced technologies that save lives, protect property, and support our economy. We appreciate the difficult decisions Congress must make within the constraints of the budget environment. However, we believe the future of the nation is well served by a strong and sustained investment in the full scope of our research enterprise, which includes the geosciences. Thank you for the opportunity to present these views.



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**The Nature Conservancy**  
**Written Testimony for programs under the National Oceanic and**  
**Atmospheric Administration (NOAA) for Fiscal Year 2017**  
**U.S. House Subcommittee on Commerce, Science, Justice and Related Agencies**  
**March 25, 2016**

Thank you for the opportunity to comment on the Fiscal Year 2017 (FY17) appropriations for the National Oceanic and Atmospheric Administration (NOAA). The Nature Conservancy is a non-profit conservation organization working around the world to protect ecologically important lands and waters for both people and nature. As the nation enters the FY17 budget cycle and another year of fiscal challenges, the Nature Conservancy recognizes the need for fiscal restraint. We believe the budget levels The Nature Conservancy supports represent a prudent investment in our country's future with modest, targeted increases that are expected to yield great returns. This investment not only helps NOAA catalyze local and regional action, but also reduces risk and saves money based on tangible economic and societal benefits that natural resources provide.

Over the years and across many sites, NOAA has been an invaluable partner to the Conservancy. NOAA programs that provide practical, community-oriented approaches to restoration, resource management, and conservation are natural fits for the Conservancy's mission. NOAA Fisheries has made important strides in addressing key challenges and strengthening fisheries management and recovery of protected species; however, much more needs to be done. To recover fish stocks so that they provide food and jobs to struggling fishermen now and in the future, we need to reduce destructive fishing practices, restore coastal habitats that produce fish, and support the efforts of fishermen and local communities that depend on fishing – and do so in a way that engages fishermen in collaborative efforts. In addition, NOAA's data, research, and monitoring of coastal and marine systems directly provide data and decision-support tools that inform the safe operations of industry, prioritize habitats for restoration, and advance science-based management decisions. Through financial and technical support, NOAA's programs enhance coastal economies dependent on healthy coastal systems and reduce the risk posed by storms and changing coastal conditions.

**National Marine Fisheries Service**

**Fisheries and Ecosystem Science Programs and Services:** The Nature Conservancy supports the President's request of \$150.169M. There is a high correlation between good information about the status of a fish stock and the effectiveness of management. Systems for collecting fishery data tend to be paper-based, slow, expensive and prone to errors and gaps. On-board video monitoring has been piloted, but has yet to be implemented in any U.S. fisheries. The Administration has incorporated the FY16 increase for Electronic Monitoring and Reporting into base funding. The Subcommittee's previous report language has been very helpful, and continued congressional guidance on the need to provide clear data and storage standards will be useful in moving these efforts from pilot to full implementation. Priority should be given to those fisheries that have already piloted these efforts. Also key is improving our understanding of the ecological and economic connections

between fisheries and nearshore habitats. The Administration's proposed \$5.929M increase for Ecosystem-based Solutions for Fisheries Management will provide tools and information to better target fisheries habitat restoration efforts.

**Habitat Conservation and Restoration:** The Nature Conservancy supports the President's request of \$58.39M. Coastal wetlands and nearshore waters produce the fish and shellfish that feed America. The health of these places is essential to the economic and social well-being of those who live, work, and recreate in coastal communities. Additionally the restoration and protection of coastal resources help to provide flood control and prevent erosion to protect our communities from storm surges. Through the Community-based Restoration Program and the Habitat Blueprint initiative, The Nature Conservancy works closely with NOAA to restore the health of degraded habitats in places and ways that benefit not just local marine life, but communities and coastal economies as well. Project funds are awarded on a competitive basis and typically leverage the resources and capacity of multiple partners. This work enhances our understanding of the connections between fisheries productivity and habitat, measures the effectiveness of conservation and restoration activities, and applies those lessons to improve future efforts. The Administration has also requested an important \$3.5M increase to enhance NOAA's capacity to for consultations on and implementation of Essential Fish Habitat. The Regional Fishery Management Councils address fishing impacts on these areas, and NOAA must have sufficient capacity to provide technical assistance to the Councils and to work with federal agencies to avoid, minimize, and mitigate the impacts of their actions on these important fishery habitats.

**Fisheries Management Programs and Services:** The Nature Conservancy supports the President's request of \$121.895M. NOAA Fisheries has made important strides in addressing these challenges and strengthening fisheries management; however, much more needs to be done. To recover fish stocks so that they provide food and jobs to struggling fishermen now and in the future, we need to reduce destructive fishing practices, restore coastal habitats that produce fish, and support the efforts of fishermen and fishing communities and do so in a collaborative way. Work begun to improve the management of electronic monitoring and reporting with the increase in the FY16 budget has notably been incorporated into base program funding. Recent legislation and administrative action to combat illegal, unreported, and unregulated (IUU) fisheries show great promise in leveling the playing field for legal fishermen. The modest proposed increase of \$1.556M to improve traceability will enable NOAA to take the next steps on traceability of seafood. Catch shares give participating fishermen a stake in the benefits of a well-managed fishery and align the incentives for resource stewardship with the natural incentive for fishermen to increase their earnings with a sustainable business model. Transition to these systems is difficult and the modest \$2.505M proposed increase will help NOAA get the design and implementation of these new catch share programs right by engaging fishing communities.

**Fisheries Data Collections, Surveys and Assessments:** The Nature Conservancy supports the President's request of \$164.749M. Limited or poor quality information on the status of fishery stocks undermines the effectiveness of fishery management and can erode political support for conservation measures. Accurate and timely stock assessments are essential for the sound management of fisheries and the sustainability of fishing resources. The funding proposed will help the agency prioritize assessments, determine what level of assessments are needed and, where to appropriately incorporate ecosystem linkages – such as climate, habitat, multispecies assemblages, and socioeconomic factors.

**Pacific Coastal Salmon Recovery Fund:** The Nature Conservancy supports the President's request of \$65M. The Conservancy appreciates the Subcommittee's efforts to maintain robust funding levels for the Pacific Coast Salmon Recovery Fund (PCSRF). It is the most critical federal program addressing major threats to Pacific salmon so that these fish can continue to sustain culture, economies, recreation, and ecosystem health. PCSRF funding is tailored for each state, competitively awarded based on merit, and has funded hundreds of successful, on-the-ground salmon conservation efforts. PCSRF invests in cooperative efforts to conserve species under NOAA's jurisdiction, and projects are matched at a 3:1 ratio (federal/non-federal). Notably, the PCSRF has catalyzed thousands of partnerships among federal, state, local, and tribal governments, and conservation, business, and community organizations.

**Protected Resources Science and Management:** The Nature Conservancy supports the President's request of \$216.721M. Competitive grants to states and tribes support conservation actions that contribute to recovery, or have direct conservation benefits for, listed species, recently de-listed species, and candidate species that reside within that state. NOAA's proposed \$16.012M increase for Species Recovery Grants will allow the agency to expand partnerships to address the growing number of listed species and allow for larger, ecosystem-level scale recovery efforts. The Nature Conservancy works with state agency partners to restore endangered species and monitor the results of these efforts, including several Species in the Spotlight initiative species. These grants are essential for having a direct benefit to "on the water" restoration efforts. Additional listed species and emerging challenges to recovery has increased the number and complexity of NOAA's consultation and permitting requirements under the Endangered Species Act and Marine Mammal Protection Act. The proposed \$13.452M to Increase Consultation Capacity will aid NOAA's ability to complete these requirements in a timely and predictable manner. Recovery of listed Atlantic and Pacific salmon provide distinct challenges. NOAA's cooperative efforts with states, tribes, and other partners such as The Nature Conservancy help to improve our understanding of and ability to protect listed salmon and the habitats that sustain them. Maintaining the increase provided in FY16 to the Atlantic salmon base funding and the propose \$2.338M proposed increase to Pacific salmon will allow NOAA to enhance recovery efforts including monitoring, fish passages, hatchery operations, and stakeholder engagement.

### National Ocean Service

**Coastal Management Grants:** The Nature Conservancy supports the President's request of \$90.646M. Our nation's coastal areas are vital to our economy and our way of life. The narrow area along our coasts is home to approximately 163 million people and coastal economies contribute over 45 percent of our gross domestic product. The \$15 million proposed increase in competitively awarded Regional Coastal Resilience Grants will provide the resources and tools to build coastal resilience to avoid costly federal disaster assistance and sustain healthy fisheries, maintain robust tourism opportunities, provide for increased shipping demands, and other coastal industries. The inaugural funding solicitations for the grants combined into this proposal drew in 196 applications with \$151 million in funding requests, nearly sixteen times the available funding, demonstrating a significant need for these grants. Coastal communities have clearly shown that they are ready to leverage this funding to take proactive measures to protect their way of life. If the Subcommittee does combine the two grant programs as proposed, it should ensure the full range of eligible activities be maintained going forward. Additionally, The Nature Conservancy has worked with NOAA through the Digital Coast partnership to develop decision support tools and techniques that help communities

understand and reduce risk and build resilience. By sharing the results of the work done through these grants and the Digital Coast partnership across federal, state, and tribal agencies, industry, and with non-governmental organizations can increase our collective ability to understand and incorporate into decision making complex coastal economic, social, and ecological needs.

**Coral Reef Program:** The Nature Conservancy supports no less than the President's request of \$26.1M. The decline of coral reefs has significant social, economic, and ecological impacts on people and communities in the United States and around the world. The Conservancy works with NOAA's Coral Reef Conservation Program under a competitively awarded, multi-year cooperative agreement to address the top threats to coral reef ecosystems: climate change, overfishing, and land-based sources of pollution. Together we develop place-based strategies, measure the effectiveness of management efforts, and build capacity among reef managers globally.

**Coastal Zone Management and Services:** The Nature Conservancy supports the President's request of \$53.847M. NOAA's data, research, and monitoring of coastal and marine systems provide data and decision-support tools that inform the safe operations of industry, prioritize habitats for restoration, and advance science-based management decisions. The Administration has requested a \$5M increase for Ecosystem-based Solutions for Coastal Resilience. Improving our ability to incorporate natural infrastructure into coastal protection efforts before and after storms can help communities achieve multiple benefits such as improving fisheries productivity and coastal water quality. The proposed \$4.006M increase for Capacity to Respond to Extreme Events will improve modeling and observations and increased technical assistance to coastal communities to help reduce their risk to coastal storms and extreme weather, ultimately saving federal disaster response and recovery expenditures. This will be further leverage by the proposed \$2M increase for the AmeriCorps' Resilience Corps Pilot Program Training and Technical Assistance. Decision support tools and increasing capacity within communities are cost-effective mechanisms to enable the implementation of resilience strategies.

**National Estuarine Research Reserve System:** The Nature Conservancy supports the President's request of \$23M. The National Estuarine Research Reserve System (NERRS) partners with states and territories to ensure long-term education, stewardship, and research on estuarine habitats. Atlantic, Gulf, Pacific, Caribbean and Great Lakes reserves advance knowledge and stewardship of estuaries and serve as a scientific foundation for coastal management decisions.

**Sanctuaries and Marine Protected Areas:** The Nature Conservancy supports the President's request of \$49.8M. National marine sanctuaries support economic growth and hundreds of coastal businesses in sanctuary communities, preserve vibrant underwater and maritime treasures for Americans to enjoy, and provide critical public access for ocean recreation, research, and education.

Thank you for this opportunity to share The Nature Conservancy's priorities. We would be pleased to provide the Subcommittee with additional information on any of the Conservancy's activities. Please contact me (703-841-8175, [sbailenson@tnc.org](mailto:sbailenson@tnc.org)) if you have questions.

Sincerely,



Stephanie Bailenson, Senior Policy Advisor for Oceans & Coasts



THE MARYLAND GENERAL ASSEMBLY  
ANNAPOLIS, MARYLAND 21401

4 March 2016

Dear Honorable Members of the House Appropriations Subcommittee on Commerce, Justice, Science, and Related Agencies,

As members of the Maryland State Legislature who are invested in the long-term health of Maryland's baywaters, oceans and sustainable commercial fisheries, we are writing to express our support for the funding amount proposed by the President in his budget for ocean acidification research and water quality monitoring under the National Oceanic and Atmospheric Administration (NOAA).

It is crucial for Marylanders to develop more scientific evidence to better inform policy decisions moving forward and to prevent a degradation of the rich and beautiful marine environments due to ocean and estuarine acidification. Ongoing research and monitoring not only sets up a foundation to face this challenge in the long term, it allows commercial fisheries and aquaculture to remain productive by adapting and actively planning in the short term.

Coastal residents are at risk of experiencing the negative effects of acidification if the issue is not sufficiently addressed due to the combination of nutrient pollution from farms, lawns and sewage systems, and the reliance of Chesapeake fishing communities on shellfish which are vulnerable to acidification such as oysters and surf clams. Federal dollars can help avert impacts by deepening our scientific understanding of the problem, enabling local businesses to remain productive through awareness and adaptation, and active planning on next steps, both locally and nationally.

Maryland has been active on ocean conservation through the establishment of the Maryland Ocean Acidification Task Force in 2014, and through partnerships such as the Chesapeake Bay Watershed Agreement that help form a framework of protection for the state's marine life, habitats, and coastal economy. However acidification is a growing threat to our effective policies that safeguard precious natural resources requiring further action.

We greatly appreciate last year's appropriation of \$10 million for FY16. However, increased funding for Integrated Ocean Acidification in the Office of Oceanic and Atmospheric

Research within NOAA will provide desperately needed resources and make sure we address one of the most critical threats to coastal communities and oceans today.

In 2011 Maryland's ocean economy directly accounted for over \$6.4 billion and over 86,175 jobs. Tourism, recreational and commercial fishing, and shellfish aquaculture all directly depend on coastal water quality. Healthy ocean resources are integral to the way of life in Maryland, and it is for these reasons that we urge your support for Integrated Ocean Acidification program funding.

Thank you for your time and consideration of our request.

Sincerely,

Senator Brian J. Feldman  
 Senator Guy Guzzone  
 Senator Cheryl C. Kagan  
 Senator Nancy King  
 Senator Susan C. Lee  
 Senator Richard S. Madaleno, Jr.  
 Senator Roger Manno  
 Senator Paul Pinsky  
 Senator Jamie Raskin  
 Senator Craig J. Zucker

Delegate Kumar P. Barve  
 Delegate Alfred C. Carr, Jr.  
 Delegate Bonnie L. Cullison  
 Delegate Kathleen M. Dumais  
 Delegate Eric Ebersole  
 Delegate Peter A. Hammen  
 Delegate Sheila E. Hixson  
 Delegate David Fraser-Hidalgo  
 Delegate Barbara A. Frush  
 Delegate Jay Jalisi  
 Delegate Arianna Kelly

Delegate Marc Korman  
 Delegate Stephen W. Lafferty  
 Delegate Clarence K. Lam  
 Delegate Mary Ann Lisanti  
 Delegate Eric G. Luedtke  
 Delegate Maggie L. McIntosh  
 Delegate Aruna Miller  
 Delegate David Moon  
 Delegate Dan K. Morhaim  
 Delegate Andrew Platt  
 Delegate Joseline A. Peña-Melnik  
 Delegate Pamela Queen  
 Delegate Kirill Reznik  
 Delegate Barbara A. Robinson  
 Delegate William C. Smith, Jr.  
 Delegate Ana Sol-Gutiérrez  
 Delegate Theodore Sophocleus  
 Delegate Dana M. Stein  
 Delegate Jeff Waldstreicher  
 Delegate Alonzo T. Washington  
 Delegate Mary L. Washington





**WRITTEN STATEMENT OF REBECCA BROWN  
POLICY DIRECTOR, INNOCENCE PROJECT  
ON THE DEPARTMENTS OF JUSTICE'S AND COMMERCE'S FY 2017 BUDGETS  
BEFORE THE HOUSE COMMITTEE ON APPROPRIATIONS  
SUBCOMMITTEE ON  
COMMERCE, JUSTICE, SCIENCE, AND RELATED AGENCIES  
March 25, 2016**

On behalf of the Innocence Project, thank you for allowing me to submit written testimony to the House Appropriations Subcommittee on Commerce, Justice, Science, and Related Agencies as it considers budget requests for Fiscal Year (FY) 2017, and thank you for the Subcommittee's support of innocence and forensic science research programs in FY 16. I write to request FY 17 funding for the following programs, please:

- **\$5 million** for the Wrongful Conviction Review Program at the Department of Justice (DoJ), Bureau of Justice Assistance (*the Wrongful Conviction Review Program is a part of the Capital Litigation Improvement Program*)
- **\$5 million** for the Kirk Bloodsworth Post-Conviction DNA Testing Program (the "Bloodsworth Program") at the DoJ, National Institute of Justice (NIJ);
- **\$14 million** for the Paul Coverdell Forensic Sciences Improvement Grant Program (the "Coverdell Program") at the NIJ;
- **\$5 million** for the Department of Justice to support the National Commission on Forensic Science; related forensic science standards setting activities at the National Institute of Standards and Technology (NIST); and implementation research at the NIJ;
- **\$15 million** for NIST to support forensic science research and measurement science.

National Registry of Exonerations data show that the number of exonerations has significantly increased since federal innocence programs, the Bloodsworth Post-Conviction DNA Testing and Wrongful Convictions Review programs, began to receive funding in 2008 and 2009, respectively. (See <http://www.law.umich.edu/special/exoneration/Pages/Exoneration-by-Year.aspx>). ***This dramatic increase in the number of exonerations is in part a result of the federal decision to invest in this critical component of the criminal justice system.*** In the 20 years prior to the initiation of innocence program funding (from 1989 to 2008), the rate of exonerations was much lower. ***In the last three years, the numbers of exoneration cases has been at its highest level, with 2015 being the best year – 149 exonerations last year alone.*** These statistics show the power and need to invest in federal innocence and forensic science programs.

Additionally, freeing innocent individuals and preventing wrongful convictions through reform ***greatly benefits public safety.*** Every time DNA identifies a wrongful conviction, it enables the identification of the real perpetrator of those crimes. ***True perpetrators have been identified in approximately half of the over 300 DNA exoneration cases.*** Unfortunately, many of these real perpetrators went on to commit additional crimes while an innocent person was convicted and incarcerated in their place.



To date, 337 individuals in the United States have been exonerated through DNA testing, including 20 who served time on death row. These innocents served an average of 14 years in prison before exoneration and release. However, the value of federal innocence and forensic science programs is not to just these exonerated individuals. It is important to fund these critical programs because reforms and procedures that help to prevent wrongful convictions ***enhance the accuracy of criminal investigations, strengthen criminal prosecutions, and result in a stronger, fairer system of justice that provides true justice to victims of crime.***

### **Wrongful Conviction Review Program**

We know that wrongful convictions occur in cases where DNA evidence is not sufficient or even available to prove innocence. The National Registry of Exonerations currently lists a total of almost 1,800 exonerations since 1989 -- over 300 of which were based primarily on DNA. The Wrongful Conviction Review Program provides critical support to ensure that experts are available to navigate the complex landscape of post-conviction litigation, as well as oversee the thousands of volunteer hours local innocence organizations leverage to help investigate these complex cases and support the significant legal work they require. Between January 2015 and January 2016, the Wrongful Conviction Review Program contributed to the exoneration of ***16 innocent individuals.***

The Wrongful Conviction Review Program provides funding to local innocence organizations so that they may provide this type of expert, high quality, and efficient representation for innocent individuals. The program's goals are both to alleviate burdens placed on the criminal justice system through costly and prolonged post-conviction litigation ***and to identify, whenever possible, the real perpetrator of the crime.***

To help continue this important work, ***we urge you to provide \$5 million for the Wrongful Conviction Review Program in FY 17. (Please note that the Wrongful Conviction Review Program is a part of the Capital Litigation Improvement Program.)***

### **The Bloodsworth Program**

The Bloodsworth Post-Conviction DNA Testing Program supports states and localities that want to pursue post-conviction DNA testing in appropriate cases. The program does not directly fund the work of local innocence organizations, but instead focuses on state and local applicants, including law enforcement agencies, crime laboratories, and others -- often in collaboration with each other, as well as with local innocence organizations. For example, a Bloodsworth grant to Arizona allowed the Arizona Attorney General's Office to partner with the Arizona Justice Project to create the Post-Conviction DNA Testing Project. This effort canvassed the Arizona inmate population, reviewed cases, worked to locate evidence and filed joint requests with the court to have evidence released for DNA testing. In addition to identifying the innocent, *Arizona Attorney General Terry Goddard noted that the "grant enable[d] [his] office to support local prosecutors and ensure that those who have committed violent crimes are identified and behind bars."*<sup>1</sup> Such joint efforts also have been pursued in many other states.

<sup>1</sup>Arizona receives federal DNA grant, <http://community.law.asu.edu/news/19167/Arizona-receives-federal-DNA-grant.htm> (last visited Mar. 13, 2012).



The Bloodsworth program is a powerful investment for states seeking to free innocent individuals and to identify the true perpetrators of crime. ***The program has resulted in the exonerations of 28 wrongfully convicted persons in 10 states. The true perpetrator was identified in 11 of those cases.*** For example, Virginian Thomas Haynesworth, who was wrongfully incarcerated for 27 years, was freed thanks to Bloodsworth-funded DNA testing that also revealed the real perpetrator. The real perpetrator in that case went on to terrorize the community by attacking twelve women, with most of the attacks and rapes occurring while Mr. Haynesworth was wrongfully incarcerated. Given the importance of this program to both innocent individuals and public safety, ***we urge you to provide \$5 million to continue the work of the Bloodsworth Post-Conviction DNA Testing Program in FY 17.***

### **The Coverdell Program**

Recognizing the need for independent government investigations in the wake of allegations of forensic negligence or misconduct, Congress created the forensic oversight provisions of the Coverdell Program, a crucial step toward ensuring the integrity of and improving public confidence in forensic evidence. Specifically, in the Justice for All Act, Congress required that

[t]o request a grant under this subchapter, a State or unit of local government shall submit to the Attorney General...a certification that *a government entity exists and an appropriate process is in place to conduct independent external investigations into allegations of serious negligence or misconduct substantially affecting the integrity of the forensic results* committed by employees or contractors of any forensic laboratory system, medical examiner's office, coroner's office, law enforcement storage facility, or medical facility in the State that will receive a portion of the grant amount.<sup>2</sup>

The Coverdell Program provides state and local crime laboratories and medical examiner offices with much needed federal funding to carry out their work both efficiently and effectively. As forensic science budgets find themselves on the chopping block in many states and localities, and as federal bodies recommend the implementation of new policies, standards, and guidelines, the Coverdell funds are critical to ensure that crime labs can function both efficiently and effectively. As the program supports both the capacity of crime labs to process forensic evidence and the essential function of ensuring the integrity of forensic investigations in the wake of serious allegations of negligence or misconduct, ***we urge you to provide \$14 million for the Coverdell Program in FY 17.***

### **Forensic Science Improvement**

To continue the critical work to improve forensic science, and help prevent wrongful convictions, we urge you to provide ***the following amounts for forensic science improvements, including:***

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<sup>2</sup> 42 U.S.C. § 3797k(4) (emphasis added).

Innocence Project, Inc.  
 March 25, 2016  
 Page 4



- **\$5 million for the Department of Justice**, including:
  - **\$1 million** for the DOJ-NIST National Commission on Forensic Science to continue its work.
  - **\$1 million** for the National Institute of Justice to conduct implementation and applied research in this area.
  - **\$3 million** directed to NIST to support technical standards development in forensic science through the Organization of Scientific Area Committees.
- **\$15 million for the National Institute of Standards and Technology (NIST)** at the Department of Commerce to support forensic science research and measurement science.

*As the federal entity that is both perfectly positioned and institutionally constituted to conduct measurement science and foundational research in support of forensic science, NIST's work will improve the validity and reliability of forensic evidence, a need cited by the National Academy of Sciences 2009 report, *Strengthening Forensic Science in the United States: A Path Forward*.<sup>3</sup> NIST's reputation for innovation will result in technological solutions to advance forensic science applications and achieve a tremendous cost savings by reducing court costs posed by litigating scientific evidence.*

NIST forensic science standards setting groups are seen by many as the most significant federal forensic science initiative in recent years. State and local forensic scientists, who conduct the vast majority of forensic science casework, are in strong support and are significantly involved in this effort. Also, the National Commission on Forensic Science, a partnership between the Department of Justice and the Department of Commerce through NIST, is an important policy guidance group, which includes State and local systems experts as well as leading scientific experts. At a time when public safety and national security are some of our nation's top priorities, it is imperative that Congress invest in scientific tools that support these endeavors. The Coverdell Program and forensic science activities and research at NIJ and NIST will help to greatly improve forensic disciplines and propel forensic science toward greater accuracy and reliability.

Thank you for your leadership in helping to ensure the integrity, accuracy, and reliability of our nation's criminal justice system. We urge you to support all of the aforementioned programs, including the Wrongful Conviction Review; Bloodsworth; Coverdell; and forensic science programs. If you have any questions or need additional information, please do not hesitate to contact me at [rbrown@innocenceproject.org](mailto:rbrown@innocenceproject.org) or 212-364-5360.

<sup>3</sup> National Research Council. *Strengthening Forensic Science in the United States: A Path Forward*. Washington, DC: The National Academies Press, 2009. doi:10.17226/12589, p. 22-23.



Testimony of  
the Joint Ocean Commission Initiative to the  
U.S. House of Representatives Committee on Appropriations, Subcommittee on  
Commerce, Justice, Science, and Related Agencies for NOAA, NSF, and NASA

March 23, 2016

Chairman Culberson, Ranking Member Honda, and other distinguished Members of the Subcommittee on Commerce, Justice, Science, and Related Agencies, we thank you for the opportunity to submit written testimony regarding the Fiscal Year (FY) 2017 Commerce, Justice, Science, and Related Agencies appropriations bill. The Joint Ocean Commission Initiative is a collaborative, bipartisan effort to implement the important work of the U.S. Commission on Ocean Policy and the Pew Oceans Commission. Our 2013 report, *Charting the Course: Securing the Future of America's Oceans*, contains recommendations to improve the management of our ocean resources that are echoed in this testimony. Furthermore, our testimony is informed by a series of regional ocean roundtables that we convened in the Arctic and on the East and West Coasts with regional, state, and local leaders to better understand the needs of their coastal regions. We are currently in the process of convening a roundtable for the Gulf of Mexico.

The Joint Initiative is highly appreciative of the progress your subcommittee has made in providing incremental, but substantive additional resources to critical ocean and coastal accounts. We are acutely aware of the challenges you face addressing the funding needs of all the programs within the jurisdiction of your subcommittee. The Joint Initiative believes a continued commitment to protecting base funding and core programs at NOAA, NSF, and NASA that help manage, protect, and better understand our nation's oceans and coasts and the Arctic is an investment in the future of our country that will provide significant economic, social, ecological, and national security benefits. Maintaining and increasing investment in the following programs should be prioritized in FY2017 appropriations:

#### **National Oceans and Coastal Security Fund**

The Joint Initiative strongly supports increasing NOAA's overall budget to \$6 billion and, in doing so, maintaining the recent trend toward balancing NOAA's portfolio to emphasize ocean and coastal priorities. For example NOAA's National Ocean Service (NOS) would be increased in NOAA's budget by nearly \$18 million to \$528 million. Specifically, The Joint Initiative strongly encourages funding the National Oceans and Coastal Security Fund (NOCS) at the requested \$10 million.

The Joint Initiative has a long history of leadership in the call for a dedicated oceans fund since the concept was initially proposed by both the U.S. Commission on Ocean Policy and the Pew Oceans Commission more than a decade ago. Allocating adequate and sustained funding has been a missing but essential link to any policy to achieve healthy oceans and coasts. The NOCS would support work by state and local governments, universities, non-profit organizations, and other oceans and coastal stakeholders to restore habitats, manage fisheries, plan for sustainable coastal development, enhance oceans monitoring and research, and acquire coastal properties for preservation.

#### **Coastal Resilience**

The Joint Initiative asks you to consider funding the Regional Coastal Resilience Grant program consistent with NOAA's FY 2017 budget request at \$20 million, a \$10 million increase from the FY

2016 appropriation. An important element of this program is its ability to provide competitive funding to support multi-state efforts to coordinate data sharing and improve decision making across jurisdictions, implement innovative solutions to shared priorities, and effectively engage ocean and coastal stakeholders. Furthermore, resilient coastal communities are not only able to minimize loss and negative impacts to life, property, and the coastal ecosystem, they are also able to quickly return residents to productive activities and restore essential services. This is imperative to facilitating full and timely economic, social, and environmental recovery.

#### Ocean Acidification

The Joint Initiative believes the inclusion of \$22 million in the NOAA budget for the Integrated Ocean Acidification program is essential to help us begin to address the chemistry, variability, and impact of acidification on the marine environment. Ocean acidification is a global challenge needing global answers. It is evident along every shoreline in the United States, and its variability over time, with depth and horizontal space are not sufficiently measured or understood. While shellfish and coral reefs receive most of the attention related to ocean acidification, fisheries, aquaculture, and coastal ecosystems and economies and jobs around the nation will be greatly affected. Funding the Integrated Ocean Acidification program at NOAA at increased levels will allow us to measure and assess the spatial and temporal extent of the emerging threat of ocean acidification, and better understand the complex dynamics causing it.

#### Arctic

The Joint Initiative recommends that Congress make a significant investment through the FY 2017 appropriations bill toward implementation of the National Strategy for the Arctic Region. Increased funding for federal agencies operating in the Arctic, such as NOAA and NSF, is essential to our international leadership in the region and will enable cross-cutting efficiencies with the Coast Guard, the Navy, and the Department of the Interior.

The Joint Initiative convened an Arctic Ocean Leadership Roundtable with U.S. Arctic leaders and key stakeholders from multiple sectors to generate ideas for how local, state, and regional work can inform and influence national policy with regard to Arctic ocean and coastal issues. Many of the ideas generated can be implemented with increased investment in the Arctic. This includes improving coordination and data-sharing on oil spill planning, preparedness, and response, vessel tracking, and search-and-rescue, as well as investment in new icebreakers, aircraft, and shore-based infrastructure. Additionally, funding Arctic-related programs at NOAA enables a range of important services essential to understanding the Arctic including ocean observation, weather and sea ice predictions, mapping and charting, and sound management of marine resources.

#### Sustained Ocean Observations

We are strongly supportive of enhanced capabilities for NOAA's Office of Oceanic and Atmospheric Research (OAR), the Integrated Ocean Observing System, and similar programs at NSF. Specifically we ask you to consider funding OAR at \$500 million to support the continued and enhanced operations of this vital program. This funding is central to NOAA's ability to accurately forecast weather, enable communities to plan for and respond to climate events such as flooding and drought, and protect and manage the Nation's coastal and ocean resources.

Funding NOAA's Sustained Ocean Observations and Monitoring program under this account at \$42 million will provide information essential for accurate forecasting of hurricanes, tsunamis,

calibrating satellites observations and monitoring fisheries. Sustained ocean observations will help maintain the continuity of long-term data sets that are essential for ensuring that communities are able to respond and adapt to a rapidly changing world, both today and into the future.

### Sustainable Fisheries

Over the last year, we have seen tremendous progress toward sustainable fisheries domestically and internationally. Through the commitment and tireless efforts of our fishermen, fishery management councils, scientists, and managers, the U.S. is poised to achieve this historic milestone in natural resource management. Not only that, but NOAA and other federal agencies have announced new initiatives to combat illegal, unreported, and unregulated fishing on a global scale. The end of chronic overfishing means healthier ocean ecosystems and a brighter future for fishermen and coastal communities. The Joint Initiative supports domestic and international efforts to fully implement the recommendations in the Presidential Task Force on Combating IUU Fishing and Seafood Fraud and applauds Congress on the passage of the implanting legislation for the Port State Measures Agreement. The Joint Initiative asks the Subcommittee to consider funding NOAA's National Marine Fisheries Service (NMFS) at the requested level of \$900 million and support other Administration initiatives to combat IUU fishing.

### Ocean Exploration

The Joint Initiative appreciates the Sub-Committee's long standing support of ocean exploration at NOAA and requests that you provide \$32 million for the Ocean Exploration program, consistent with funding in FY 2016, to at least maintain the pace, scope, and efficiency of exploration. This would be \$12 million above the NOAA budget request for FY 2017. A bipartisan effort since inception, the Ocean Exploration program was strongly endorsed by Congress when created in 2002. The program has greatly contributed to our knowledge of the ocean, producing Arctic surveys which enabled the U.S. to argue for an extension of our own Exclusive Economic Zone; baseline characterization of the Deepwater Horizon site in the Gulf before and after the oil spill; discovery of new gas hydrates stretching from Cape Cod to Cape Hatteras, with implications for coastal hazards and ocean acidification; and new fishery habitat maps off the Northeast.

### Science, Research, and Education

The Joint Initiative calls attention to the need for consistent and dedicated funding for ocean science, research, and education. We ask you to increase funding for ocean science infrastructure, research, and grant programs at NOAA, NSF, and NASA that are working to improve our understanding of critical physical and biological ocean processes. These programs provide local, state, and national decision makers with the information they need to make informed decisions.

An essential element of ocean science is the supporting infrastructure. This includes a variety of platforms including ships, mooring, buoys, gliders, floats and autonomous underwater vehicles, as well as computational and data management hardware. This core infrastructure is the backbone of sustained ocean and coastal observations, and in combination with the remote sensing capabilities, is essential to establishing and maintaining the long-term in-situ databases that are essential to understanding changes in physical, biological and biogeochemical processes and systems. The ocean science community is dependent upon the infrastructure provided by NOAA, NSF and the Navy, and it is imperative that Congress provide operational and maintenance support necessary to keep this infrastructure functioning, and to support its regular modernization. Support for this

infrastructure is spread across many agencies and programs, and we ask the Committee to recognize and adequately support these programs and activities.

In particular, we encourage you to provide \$7.964 billion for the NSF, including \$1.398 billion for the Geosciences Directorate and its Division of Ocean Science. NSF's investment in the geosciences has spurred innovations, addressed important national and global challenges, spurred new economic sectors, supported research that produces most of the technical geosciences jobs in American industry, and led to the development and implementation of advanced technologies that save lives, protect property, and support our economy. For example, investments supporting basic research in mathematics, physical sciences, computer sciences, and geosciences, have led to the development of sophisticated models, satellites, radar, and instrumentation that has greatly improved hurricane forecasting, now allowing for nearly a week of preparations by cities, businesses, institutions, and unquestionably saving lives. Now more than ever, America must grow a future technical geoscience workforce while the price of oil is so low, because we will need that educated workforce when oil prices recover.

We also urge \$2.03 billion in funding for the NASA's Earth Science Division, up from \$1.9 billion in FY 2016 to support critically important ocean and coastal science and education. NASA improves our national capabilities to predict climate, weather, and natural hazards and better manage national resources.

### Concluding Remarks

The Joint Initiative greatly appreciates your commitment to stretching scarce resources to address the challenges of the world's greatest maritime nation. We will continue to track progress in advancing key ocean and coastal programs and accounts in FY 2017 and beyond. Recommendations from "Charting the Course" and other reports from the Joint Initiative identify specific areas of achievement and deficiency. Implementation of the recommendations will secure the future of our nation's ocean ecosystems, and the critical resources they provide, and ensure that they will be abundant and able to support America's ocean, coastal, and Great Lakes economies and the jobs and communities on which our nation depends. In that spirit, we urge you to resist riders which complicate the nation's ability to coordinate state, regional and national policies to address urgent coastal and ocean issues.

Thank you for considering our requests as the Subcommittee begins its FY 2017 appropriations process. The Joint Initiative appreciates your attention to this matter and stands ready to assist you in advancing positive and lasting changes in the way we manage our nation's oceans and coasts.

*Joint Initiative Co-Chairs and Leadership Council Members*

The Honorable William Ruckelshaus | The Honorable Norman Mineta

Frances Beinecke | Don Boesch | Lillian Borrone | The Honorable Norm Dicks

Quenton Dokken | Vice Admiral Paul Gaffney | Robert Gagosian | Sherri Goodman

Scott Gudes | The Honorable Conrad Lautenbacher | Margaret Leinen

Christopher Lischewski | The Honorable Jane Lubchenco | Julie Packard

The Honorable Leon Panetta | John Pappalardo | The Honorable Pietro Parravano

Diane Regas | Randy Repass | Andrew Rosenberg | The Honorable Christine Todd Whitman



**Monika Johnson Hostler  
President, Board of Directors  
National Alliance to End Sexual Violence**

**Testimony Presented For the Record**

**United States House of Representatives  
Committee on Appropriations  
Subcommittee on Commerce, Justice, Science, and Related Agencies**

**March 30, 2016**

On behalf of the National Alliance to End Sexual Violence (NAESV) representing 56 state and territorial sexual assault coalitions and more than 1300 local rape crisis centers, I am respectfully requesting FY 2017 federal funding in the Department of Justice Office on Violence Against Women Program and the Office of Justice Programs to support comprehensive services for victims of sexual violence and invest in more effective law enforcement to increase prosecution and help victims recover. Specifically, NAESV is urging Congress to provide \$40 million for the Sexual Assault Services Program (SASP); \$222 million for the Services, Training, Officers, Prosecutors (STOP) Formula Grant Program; \$73 million for the Grants to Encourage Arrest Policies; \$50 million for Services to Rural Victims; \$57 million for Legal Assistance for Victims; \$26 million for Campus Program; \$45 million for Sexual Assault Kit Backlog and an additional \$20 million for kit evidence DNA testing, technical assistance and lab technology; and \$2.5 million for Rape Survivor Child Custody Act implementation. NAESV also urges Congress to release at least \$2.6 billion from the Crime Victims Fund to meet the needs of victims and provide a stable funding stream to the State Victim Assistance Grants.

One in five women has been the victim of rape or attempted rape. Nearly one in two women has experienced some form of sexual violence and one in five men has experienced a form of sexual violence other than rape in their lifetime. The CDC National Intimate Partner and Sexual Violence Survey confirmed that the impacts on society are enormous. Over 80% of women who were victimized experienced significant short and long-term impacts related to the violence such as Post-Traumatic Stress Disorder (PTSD), injury (42%) and missed time at work or school (28%). The CDC report shows that most rape and partner violence is experienced before the age of 24, highlighting the importance of preventing this violence before it occurs.

Our 2015 NAESV survey of the nation's rape crisis centers found that almost half of the programs experienced an overall decrease in funding over the past year, that almost half have waiting lists for counseling which can range from two weeks to three months, while one third experienced a reduction in staff. When rape crisis centers are underfunded, they can't meet the needs of sexual assault survivors and prevention programs are sidelined.

Sexual assault is widespread and devastating. Please fund the following rape crisis center priorities.

**Sexual Assault Services Program (SASP)** – We request \$40 million for SASP which provides federal funding dedicated entirely to the provision of direct services for victims of sexual violence. We are most appreciative of the \$35 million provided by Congress in FY 2016. SASP formula funding is awarded to states, territories and tribes to provide services to adult and child victims and their families. Grant funds can be used for crisis intervention, counseling and support, and especially accompaniment through the medical and criminal justice systems. Advocates help the criminal justice system respond more effectively – more police reports, more prosecutions and more convictions equal safer communities.

Grants to culturally specific organizations help support intervention and related assistance for underserved victims and communities of color. When victims receive advocate-assisted services following assaults, they receive more helpful information, referrals and services, and experience less secondary trauma or re-victimization by medical and legal systems. Advocates help victims heal. When advocates are present in the legal and medical proceedings following rape, victims fare better in both the short- and long-term, experiencing less psychological distress, physical health struggles, self-blame, guilt, and depression.

**Services, Training, Officers, Prosecutors (STOP) Formula Grant Program** – We support \$222 million for the STOP program which awards funds to every state and territory through a formula-based system. States use STOP funds to train law enforcement, prosecutors, judicial officers, court staff, medical professionals, and educators. Victims benefit from sexual assault response teams, victim-witness notification operations, and special crime units in law enforcement to address sexual assault. VAWA 2013 set aside a minimum of 20% of these funds toward programs to address sexual assault.

We also strongly support language exempting STOP funding from a five percent mandatory reallocation or reduction of funds that may be imposed on states under the Prison Rape Elimination Act (PREA). We believe the inclusion of the STOP program was an unintended consequence of a VAWA 2013 amendment to the STOP program, which was originally proposed to encourage states to fund rape crisis centers to help victims of sexual assault in prisons. When Congress enacted the PREA penalty in 2003, the STOP program would not have been a “covered” program, because at that time of enactment, its purpose areas solely addressed offender accountability and victim safety, without any mention of prisons.

**Grants to Encourage Arrest Policies** – We request \$73 million which supports local multidisciplinary responses to rape including Sexual Assault Response Teams (SARTs) and Sexual Assault Nurse Examiners (SANEs). VAWA 2013 set aside 25% of these funds towards projects to improve the investigation and prosecution of sexual assault.

**Services to Rural Victims** – We request \$50 million which provides services for victims of domestic and sexual violence living in rural and isolated areas. These victims face unique barriers including a small number of programs serving a large geographic area, under-resourced law enforcement and a lack of essential services including legal services and public

transportation. We thank Appropriators for placing an emphasis on improving the program and raising awareness of the funding availability in rural communities.

**Legal Assistance for Victims** – We request \$57 million for this program which has a new focus on the historically unmet civil legal needs of victims of sexual assault including assistance obtaining protection orders and advocacy with housing, education and employment matters. Additional funding will enable communities to hire highly trained attorneys willing to take on complex litigation.

**Campus Violence Program** – We request \$26 million to reduce sexual assault, domestic violence, dating violence, and stalking on campus. Funding will be used to assist campuses with climate surveys, implementing prevention programs, investigating and adjudicating assaults, establishing partnerships with law enforcement and local rape crisis centers, and providing services to victims. One way schools can transform the way they respond to these crimes is to conduct campus climate surveys and take action on the results. Funding will allow schools to implement CDC evidence-based recommended prevention programs, investigate and adjudicate assaults, partner with local rape crisis centers to ensure confidential advisors, training and technical assistance, and partner with local law enforcement.

The authorizing language for this program caps grant awards at \$300,000 for three years. NAESV supports the Administration's request to allow the Office on Violence Against Women the option to make larger grant awards and provide colleges and universities greater opportunity to implement best practices and specialized activities, such as measuring the prevalence of sexual assault on campus or conducting prevention programs. We support the request to exempt \$8 million of the annual appropriation from the funding cap and provide more flexibility to use those funds for special initiatives to enhance schools' responses to sexual assault, dating violence and stalking.

**Sexual Assault Kit Backlog** - We request \$45 million for multi-disciplinary community response teams tasked with a comprehensive approach to sexual assault cases, and the additional \$20 million for kit evidence DNA testing, technical assistance and lab technology.

**Rape Survivor Child Custody** – We request \$2.5 million to encourage states to enact laws allowing the mother of any child conceived through rape to seek court-ordered termination of parental rights of the rapist with regard to that child.

**Victims of Crime Act (VOCA) Fund** – We support releasing at least \$2.6 billion from the Crime Victims Fund to meet the needs of victims and provide a stable funding stream to the State Victim Assistance Grants. VOCA funding allows rape crisis centers to reach survivors of campus and military rape, reduce waiting lists, improve trauma-informed responses to survivors of childhood sexual abuse, and assist more survivors to heal and thrive.

The Crime Victims Fund is a non-taxpayer fund supporting almost 4,500 victim service agencies, such as rape crisis centers, child abuse treatment programs and domestic violence shelters, in order to help victims deal with the immediate aftermath of a crime. We support setting the VOCA cap at an average of the past three years' deposits into the account to provide a

long-term and consistent basis for determining the annual VOCA spending cap. We do oppose the transfer of VOCA funds to other VAWA programs jeopardizing basic funding for programs.

We also support the establishment of a direct tribal funding stream from VOCA. Since federally-recognized tribes are autonomous sovereign governments, they should be able to access the Crime Victims Fund directly and protect victims of crime as can states and territories. Individuals on tribal lands experience disproportionately high rates of domestic and sexual violence and desperately need funding for victim services.

In summary, the best way to convict a rapist is to support and advocate for the victim, obtain evidence, and provide assistance and training to law enforcement. As you begin the FY 2017 appropriations process, please consider our priority requests for services to sexual assault victims. If we can provide further information, please do not hesitate to contact me or Terri Poore, Policy Director, National Alliance to End Sexual Violence, at (850) 228-3428 or [terri@endsexualviolence.org](mailto:terri@endsexualviolence.org).

**Written Testimony by Arturo Vargas  
Executive Director, NALEO Educational Fund  
to the Commerce, Justice, Science, and Related Agencies Subcommittee  
of the House Appropriations Committee  
March 31, 2016**

On behalf of the National Association of Latino Elected and Appointed Officials (NALEO) Educational Fund, I write to urge you to support the Fiscal Year 2017 budget request for the Census Bureau of \$1.634 billion. This level of funding will enable the Bureau to thoroughly assess and prepare for the implementation of new approaches for the Census 2020 count that may save as much as \$5 billion on the cost of administering Census 2020. It will also enable the Bureau to produce up-to-date American Community Survey data for use in the distribution of more than \$400 billion in critical federal funding for basic community needs.

The NALEO Educational Fund is the nation's leading nonprofit organization that facilitates the full participation of Latinos in the American political process, from citizenship to public service. Our Board members and constituency encompass the nation's more than 6,000 Latino elected and appointed officials, and include Republicans, Democrats, and Independents. The NALEO Educational Fund has long been recognized for our expertise in Census policy development and public education. We have been a key participant through multiple decennial Census cycles in the creation and implementation of outreach initiatives. We have also worked closely with the Census Bureau in developing policies and practices to improve the enumeration of hard-to-count Latino communities. We currently are a member of the Census Bureau's National Advisory Committee on Racial, Ethnic, and Other Populations, which is the successor organization to two Advisory Committees on which we have previously served.

For the NALEO Educational Fund, Latino elected and appointed officials, and our nation's rapidly-growing Latino population, the Census Bureau's provision of timely and accurate information about the American people is one of the most important and irreplaceable functions performed by the federal government. We urge you to adopt the following recommendations which will enable the continued oversight of our precious human and financial resources.

**Allocate sufficient funding to enable the Census Bureau to test and implement cost-saving innovations for the 2020 decennial count:** In 2020, the Census Bureau will undertake a decennial enumeration that is, and must be, significantly different than it was in 2010. Our nation's population has grown and diversified since 2010, and the constitutionally-mandated task of counting all of its residents will be more difficult than it has ever been. In order to meet the foreseeable challenges of reaching an unprecedented number of households, the Census Bureau has proposed four major types of changes to its practices and procedures, each of which will require testing and refinement prior to implementation:

- Collecting responses primarily through the Internet instead of paper forms;
- Redesigning collection of information about respondents' race and ethnicity;
- Using administrative records to gather information about non-responding households; and
- Reducing the number of field offices and the size of the workforce deployed in the decennial enumeration.

The Census Bureau cannot move forward with these innovations unless it can evaluate their effectiveness based on practical experience. Testing of the cost-saving measures proposed by the Census Bureau must be completed in FY17, so that information technology systems and operational plans are in place in time for the 2018 End-to-End Readiness Test, and so that the Census Bureau can submit questionnaire content to Congress by April 1, 2017 as required by law. Therefore, Congress cannot delay in allocating adequate funding for 2020 Census preparations. The FY 2017 budget for decennial Census planning is a modest \$182 million more than was appropriated in FY16. Granting this request is the far more fiscally conservative and responsible course of action compared to the alternative of spending \$18 billion or more to conduct a decennial Census that cost about \$13 billion in 2010.

**Provide full funding for the American Community Survey:** The American Community Survey (ACS) is an incomparably valuable source of current data about Americans' characteristics, experiences, and needs. The socio-economic and demographic data the Survey produces are updated annually, and tailored to permit Congress to make sound decisions and to direct resources to where they are most needed and will be used the most effectively. ACS data are also indispensable to state and local governments, businesses, and non-profit organizations that use them for tasks ranging from the siting of new schools and roads to the development of marketing strategies. These private and public entities have no other possible means of obtaining information of equal quality and reliability. Because it conducts the ACS on a rolling basis, the Census Bureau is able to use the survey as an important testing ground for new concepts in consideration for use in decennial enumeration.

We urge you to allocate the \$251.1 million requested for the ACS in FY17, so that the Census Bureau can continue producing timely, high quality data. This proposed funding level will ensure maintenance of a sufficiently large sample size to permit publication of data on smaller communities and population groups, including rural counties, Native American reservations, people with disabilities, and veterans. It will also guarantee the Bureau's future ability to use the ACS to conduct research on more efficient enumeration methods that promise to limit the cost of data collection, and the associated burden on survey respondents.

In any given year, appropriations for the Census Bureau are a crucial factor in determining how well and effectively governmental and private entities function. Funding levels for the Census Bureau determine the accuracy of data that are fundamental to our nation's economic development and social welfare. This is particularly and acutely true in FY17 because the Bureau will encounter critical deadlines throughout the year in the lead-up to the massive mobilization of resources that the decennial Census requires. Missing these deadlines is not an option if the Bureau is to conduct the most cost-effective and accurate count of which it is capable. It is essential that Congress provide the requested funding to the Census Bureau of \$1.634 billion for FY17.

Please do not hesitate to contact Laura Maristany, our Washington, DC Director, at (202) 360-4182 or [lmарistany@naleo.org](mailto:lmарistany@naleo.org) if we may answer questions or provide further information about the importance of full funding for the Census Bureau. Thank you for your consideration of this testimony.

**Teresa Huizar**

**Executive Director**

**National Children's Alliance**

**Prepared for the Subcommittee on Commerce, Justice, Science and Related Agencies**

**Department of Justice, Office of Justice Programs Funding**

**Chairman Culberson, Ranking Member Honda and Members of the Subcommittee:**

Thank you for the opportunity to provide testimony regarding the funding priorities of the House Appropriations Subcommittee on Commerce, Justice, Science, and Related Agencies.

National Children's Alliance is the member-accrediting body for almost 800 Children's Advocacy Centers (CACs) throughout the US. We empower local communities to respond to child abuse by providing grants for the start-up and development of CACs, which coordinate a multidisciplinary team for the investigation, prosecution, and treatment of child abuse. Funded through the Victims of Child Abuse Act, these critical centers served more than 311,000 child victims of abuse throughout the U.S. in 2015; a majority of whom were victims of sexual abuse. In addition, CACs provided more than 1.8 million individuals with child abuse prevention education. As you begin drafting your Subcommittee's Fiscal Year 2017 Appropriations bill, we respectfully urge you to again fully fund the Victims of Child Abuse Act program at its current authorized level of \$20 million in the Department of Justice's Office of Justice Programs, Juvenile Justice Account.

## **Child Sexual Abuse**

Children of every gender, age, ethnicity, socioeconomic status, and family structure are at risk for sexual abuse. Child sexual abuse is a crime perpetuated by silence and secrecy. Isolation, whether within a family or by community, adds significant risk for sexual abuse. Children who live in rural areas, for example, are almost 2 times more likely to be identified as victims of child sexual abuse.<sup>1</sup>

Understanding the scope of the problem also requires understanding that child sexual abuse exists on a continuum of deviant and harmful behavior by the perpetrator that begins on one end with secretive and furtive victimization, slides into amateur or professional photo-documentation of that abuse primarily for the sexual gratification of the offender, may move toward commercialization or public sharing of those images with other offenders, and on the

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<sup>1</sup> Sedlack, et al 2010.

far end of that continuum may include prostituting or trafficking the child. And, of course, a child may experience one, all, or some combination of these forms of child sexual abuse.

### **Responding to Child Abuse and the Role of Children's Advocacy Centers**

Children's Advocacy Centers play a key role in the investigation and prosecution of child abuse cases, and in the healing of victims. CACs are child-friendly facilities in which a multidisciplinary team comprised of law enforcement, child protective services, prosecutors, victim advocates, medical practitioners, and mental health professionals convenes and coordinates its efforts to investigate and prosecute child abuse cases while protecting children and providing needed treatment to victims. Across the United States, there are almost 800 Children's Advocacy Centers, which together served more than 311,000 child victims of abuse in 2015 alone.

The majority of these Children's Advocacy Centers were founded after the passage of the Victims of Child Abuse Act in 1990; which was an important part of Congress' efforts to improve the investigation, prosecution, and treatment of child abuse. Monies appropriated by Congress, each year since 1992, have improved the response within existing Centers, while aiding the development of new Children's Advocacy Centers in areas previously underserved. This much appreciated federal investment has been used to leverage state funding, private foundations, and local community donors.

This investment has yielded significant returns. The model of comprehensive care for child abuse victims has significant evidence of its efficacy. Independent research has found that child abuse cases coordinated through a Children's Advocacy Center have:

- a shortened length of time to disposition<sup>2</sup>;
- increased rates of prosecution<sup>3</sup>;
- more satisfaction on the part of child victims and their non-offending caregivers<sup>4</sup>;
- higher levels of service provision for medical evaluations; and
- increased referrals for mental health treatment than non-CAC cases<sup>5</sup>.

In short, the multidisciplinary team approach has shown that it is possible to reduce trauma to child victims of abuse while improving the legal outcome of cases and holding offenders

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<sup>2</sup> Walsh, W.A., Lippert, T., Cross, T. P., Maurice, D. M. & Davison, K. S. (2008). How long to prosecute child sexual abuse for community using a children's advocacy center and two comparison communities? *Child Maltreatment*, 13(1), 3-13.

<sup>3</sup> Smith, D. W., Witte, T. H., & Fricker-Elhai, A. E. (2006). Service outcomes in physical and sexual abuse cases: A comparison of child advocacy center-based and standard services. *Child Maltreatment*, 11(4), 354-60

<sup>4</sup> Lalayants, M., & Epstein, I. (2005). Evaluating multidisciplinary child abuse and neglect teams: a research agenda. *Child Welfare*, 84(4), 433-58.

<sup>5</sup> Smith et al 2006.



accountable. And, at a time when financial resources are limited at every level of government, Children's Advocacy Centers have been demonstrated *to save on average over \$1,000 per child abuse case* compared to non-CAC communities<sup>6</sup>.

## The Victims of Child Abuse Act

Sadly, this effective and efficient response is not available to every child sexual abuse victim in the U.S. Currently, abused children in 2,104 counties in the U.S. have access to the services of a Children's Advocacy Center. This also means that abused children in more than 1,000 counties have no access to this comprehensive care. Indeed, those areas that are underserved are the most rural, most geographically isolated, and the most resource-poor parts of our country. But, these children are not simply Texas's children, or California's children, or Kentucky's children: they are America's children. Indeed, the Victims of Child Abuse Act was conceived by Congress on a bipartisan basis to create and sustain a support system for every law enforcement officer and prosecutor combating child abuse across the nation, while also ensuring a network of care for the victims. And in 2014, Congress reaffirmed its overwhelming support of federally funding the Victims of Child Abuse Act by unanimously reauthorizing the statute.

Children's Advocacy Centers are also uniquely equipped to be the first point of contact for victims of child trafficking. Recent research indicates that "one of the major ways that officers [reported] compromising previous potential human trafficking investigations was through poor interviewing of victims."<sup>7</sup> In that same report, researchers noted that "human trafficking victims who suffer from trauma may require multiple interviews before they can accurately discuss the victimization they experience."<sup>8</sup> For more than 25 years, Children's Advocacy Centers have proven their forensic interviewing techniques, and trauma-focused intervention services, help victims through the process. And, more recently, many of our CACs have begun developing programs specifically aimed at providing services for trafficking victims, funded in part with Victims of Child Abuse Act monies.

Beyond intervention services for victims and their families, Children's Advocacy Centers also provide training to their multidisciplinary team members. Last year, National Children's Alliance, and their Children's Advocacy Center members and partners, provided training to more than 67,000 child abuse professionals. Investigating, prosecuting, and treating child abuse is complex and specialized work that requires highly trained professionals and access to

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<sup>6</sup> Formby, J., Shadoin, A. L., Shao, L., Magnuson, S. N., & Overman, L. B. (2006). Cost-benefit Analysis of community responses to child maltreatment: A comparison of communities with and without Child Advocacy Centers. (Research Report No. 06-3). Huntsville, AL: National Children's Advocacy Center

<sup>7</sup> Farrell A., McDevitt J., Pfeiffer R., Fahy S., Owens C., Dank M., Adams W. (2012). Identifying Challenges to Improve the Investigation and Prosecution of State and Local Human Trafficking Cases. Northeastern University's Institute on Race and Justice and the Urban Institute's Justice Policy Center, pp 96-97.

<sup>8</sup> Ibid.

continuing education for those professionals. Because 98% of child abuse investigations and prosecutions occur at the state/local level, training resources using federal funds should likewise be driven down to this level, and the Victims of Child Abuse Act funding supports this vital training.

While this network has been deeply threatened over the past several years when funding for the Victims of Child Abuse Act was either eliminated or cut in half within the President's Department of Justice budgets, Congress's continued support to ignore the request and restore these critical funds ensures victim services for those in need.

We understand that the past few budget years, and current budget climate, have forced increasingly difficult choices on Congress and the Administration and are deeply grateful the Victims of Child Abuse Act continues to receive full funding. This modest federal funding investment leverages Children's Advocacy Centers as a vital resource to law enforcement and prosecutors, ensuring that our communities are safer and offenders are held accountable.

### **Services for Child Sexual Abuse Victims**

While child abuse investigations are important to the safety of victims and the accountability of offenders, we must also help victims learn to cope with the trauma. Child sexual abuse has well-documented life-long effects. Victims of child sexual abuse are more likely than their non-abused counterparts to become pregnant as teens, to drop out of high school, to abuse substances, to engage in self-destructive and risk-taking behavior, and to experience anxiety and depression. As adults, these individuals have increased morbidity and mortality, suffering from a host of physical and mental ailments at higher rates than their non-abused peers.<sup>9</sup> Moreover, their own children are more likely to suffer sexual abuse during the course of their lifetimes than other children. This is truly the saddest possible cycle of abuse.<sup>10</sup>

This host of maladies is the result of the trauma caused by abuse. Child abuse victims experience rates of trauma symptoms (hyperarousal, fear, sleep disturbances, anxiety, and depression) at rates verging on those experienced by war veterans. Fortunately, much has been learned over the past 15 years about successfully treating trauma in children. Every child who has been the victim of abuse deserves to be assessed to see if they would benefit from mental health treatment, and if so, to have it provided to them promptly.

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<sup>9</sup> Dube S.R., Anda R.F., Whitfield C.L., Brown D.W., Felitti V.J., Dong M., Giles W.H. (2005). Long-term consequences of childhood sexual abuse by gender of victim. *American Journal of Preventive Medicine*, 28 (5), pp. 430-438.

<sup>10</sup> Penelope K. Trickett, Jennie G. Noll and Frank W. Putnam (2011). The impact of sexual abuse on female development: Lessons from a multigenerational, longitudinal research study. *Development and Psychopathology*, 23 , pp 453-476 doi:10.1017/S0954579411000174

Abused children served within Children's Advocacy Centers have access to such trauma-focused, evidence-supported mental health treatment. For the more than 311,000 children served within Children's Advocacy Centers last year, there is no doubt that the care they received was improved, and suffering they experienced was reduced for having had access to such treatment.

### **In Summary**

Child sexual abuse is a far too common experience for America's children. And child sexual abuse is preventable. More than 2 decades of research reflects the effectiveness of child sexual abuse prevention and body safety information for children. One of the most effective prevention and response systems is available through Children's Advocacy Centers. There are close to 800 such centers throughout the U.S. that have been proven to be cost-effective and efficient in coordinating the investigation, prosecution, and protection of children while ensuring that child victims of abuse receive effective treatment. While the investigation and prosecution of child abuse cases is important in holding offenders accountable, this alone is not sufficient to help victims heal. Victims require trauma-focused, evidence-supported mental health treatment in order to heal.

We urge your strong support for again funding the Victims of Child Abuse Act at \$20 million for FY17 to provide valuable assistance to law enforcement, keep communities safer, and strengthen justice and healing for victims. Thank you.

# NERRA

**National Estuarine  
Research Reserve  
ASSOCIATION**

Testimony for the Record

Cory A. Riley

President, National Estuarine Research Reserve Association

Before the

Commerce-Justice-Science and Related Agencies Subcommittee

Committee on Appropriations

United States House of Representatives

Washington, D.C.

March 22, 2016

Chairman and Members of the Subcommittee, my name is Cory Riley and I am the Manager of the Great Bay National Estuarine Research Reserve in New Hampshire, administered by the new Hampshire Fish and Game Department. I submit this testimony in my capacity as President of the National Estuarine Research Reserve Association (NERRA). NERRA is a not-for-profit scientific and educational organization dedicated to the protection, understanding, and science-based management of our nation's estuaries and coasts.

Thank you on behalf of these special places and all of the communities they support. We appreciate the investment Congress has made in the National Estuarine Research Reserve System over the past 42 years. Because of your support, this system has grown into a network 28 protected places where more than 36,000 people use research reserves to address critical challenges like how to balance conservation with economic growth, plan for changing sea levels and extreme storms, protect nursery habitat that supports fishing, and prepare our children to be wise stewards of these precious resources in the future.

## **A national program with local relevance**

Twenty eight National Estuarine Research Reserves have been designated in 22 states and Puerto Rico, protecting over 1.3 million acres of land and water in perpetuity. This unique state-federal partnership brings the scientific expertise and financial investment of NOAA into coastal communities across the country. Investments in the research reserves support locally implemented science-based coastal resource management, research, and education programs. As a network, the sites study important estuarine trends, and conduct science based education and outreach to meet national priorities as mandated by Congress in the Coastal Zone Management Act (CZMA) of 1972.

The NERRS program has grown as states have increasingly recognized the value of the program. The addition of new reserves has provided more science, training, and education resources that can be applied nationally. However, the cost associated with operating the NERR program nationally has increased given the recent addition of two reserves (Texas and Wisconsin) with a third (Hawaii) entering the system in fiscal year 2017, and a fourth (Connecticut) engaged in the designation process now. NERRA would like to expand the network while continuing high quality programs at each reserve and maintaining the national infrastructure needed to monitor each site. To do this, the system will need more funding.

### **NERRA encourages investing \$900,000 above the Administration request**

For Fiscal Year 2017, NERRA strongly recommends the following reserve system programs and funding levels within the National Oceanic and Atmospheric Administration (NOAA):

NERRS Operations	\$23.9 million
NERRS Procurement, Acquisition, and Construction (PAC)	\$1.7 million

The Administration's FY 2017 request for the NERRS is \$23 million; leaving a \$900 thousand dollar gap between the administration request and NERRA's request. After reviewing the detailed NOAA budget request sent to the Congress, we believe that the states are inadequately supported to implement this national program and compromised in their ability to fulfill the vision of Congress in its creation of the NERRS program. NERRA is deeply concerned with the Administration's funding levels that we believe are inconsistent with key tenants of NOAA's own strategic plan—specifically, enhancing community and economic resiliency and strengthening science in support of coastal resource management.

### **The Administration's FY17 requested funding level will diminish the NERRS's capacity to:**

1. *Maintain and improve coastal intelligence:* Reserves provide environmental observing and water quality data and products based on the most comprehensive national, long term data set on estuarine conditions. System-wide monitoring and data networks provide immediate and long-term information to understand harmful algal blooms, assess water quality, identify habitat impacts from changing sea levels, aid in weather forecasting, and improve response to storm surge. Hundreds of entities use the NERRS water quality and weather data, including; state water quality control programs, county health departments, shellfish growers and fishing industry professionals, the National Weather Service, and insurance companies.
2. *Serve as an early warning center for changes to our coast:* Reserves are working to understand changes in water levels, acidity, salinity and elevation on our coasts. In addition, reserves are sentinels for changes to tidal marshes, mangroves and sea grass beds. These habitats provide a wide range of highly valued ecosystem services such as nursery habitat for commercial and recreational important fish, erosion and flood control, and water quality improvements. Understanding how the coastal conditions are changing in relation to stressors such as storm surge, changes in precipitation, sea level rise, and development patterns is critical to understanding the ability of natural coastal habitats to provide food, flood storage, and pollution mitigation.

### **NERRS provide needed services at a low cost**

Coastal dependent communities, businesses and industries rely on research reserve generated information about coastal conditions; local boards and elected officials rely on the reserves to provide relevant information and data related to hazards and sea level rise; and educators rely on reserves to teach students and teachers how to collect, analyze and translate environmental data. Funding of \$23.9 million for the NERRS is the minimal amount needed to provide each reserve with the necessary funding to insure that cuts to the states as well as to existing core programs and services do not occur.

Investments in the NERRS are dollar-smart because funding for the program is matched by the states and leveraged significantly, resulting in an average of more than five other local and state partners contributing to the work at each reserve. In addition, the program significantly benefits from volunteers that are engaged in habitat restoration, citizen science and education which offset operation costs at reserves by donating thousands of hours. Annually, volunteers contribute more than 100,000 hours to the NERRS with an estimated value of over \$2.2 million.

#### **NERRA encourages investment in NERRS PAC funds and BWET grants**

The NERRS Procurement, Acquisition, and Construction (PAC) funding is designated for land conservation, through acquisition of priority lands, and essential facilities construction and upgrades. This competitive funding program is matched by state funds and is critical to maintaining the places that host NERR research, education and outreach. These funds have resulted in not only the preservation of critical coastal lands as described above, but also in the increase of construction jobs. For example NERRS creates more than 60 jobs for each \$1 million of federal construction (PAC) money spent. In addition, NERRS leveraged investments of more than \$115 million to purchase over 30,000 acres of coastal property over the last 12 years.

Within the budget request for NOAA, the Administration is again proposing the elimination of funding for the Bay-Watershed Education and Training (B-WET) regional programs—a reduction of \$7.2 million in funding. The rationale provided for program reductions is misleading in stating that NOAA education experiences will continue to be provided by programs including the NERRS. Where states are eligible for B-WET funding, reserves are able to increase their educational capacity by as much as 50%. The B-WET regional program funding is money that is spent *in addition* to the annual NERRS money invested in the education programs, allowing each program to reach more students and teachers in coastal communities. The NERRS educate more than 83,000 children annually. NERRA strongly opposes the cut of B-WET regional programs and any of the other NOAA STEM educational programs.

#### **Conclusion**

NERRA greatly appreciates the past support the Subcommittee has provided. This support is critical to sustain and increase the economic viability of coastal and estuary-based industries.

With NERRA's FY 2017 request of \$23.9 million for the NERRS Operations and \$1.7 million for NERRS PAC, the program will be able to maintain delivery of credible scientific research and translation to the 28 reserves around the country. We urge the Subcommittee to support this request, and to restore funding for the B-WET regional programs.

Thank you for the opportunity to present these remarks. On behalf of NERRA, I would be happy to answer questions or provide additional information to the Subcommittee.

**Testimony for the Commerce, Justice, Science Appropriations Subcommittee  
United States House of Representatives  
Kim Gandy, President and CEO, National Network to End Domestic Violence  
Regarding the  
Violence Against Women Act (Office on Violence Against Women) and  
Victims of Crime Act (Office for Victims of Crime)  
U.S. Department of Justice  
March 29, 2016**

Chairman Culberson, Vice Chairman Honda, and distinguished members of the Appropriations Committee, thank you for this opportunity to provide testimony on the importance of investing in Violence Against Women Act programs and the Victims of Crime Act. I sincerely thank the Committee for its ongoing support for these lifesaving programs.

I am the President and CEO of the National Network to End Domestic Violence (NNEDV), the nation's leading voice for victims of domestic violence and their advocates. We represent the 56 state and territorial domestic violence coalitions, their over 2,000 member domestic violence and sexual assault programs, and the millions of victims they serve. Our direct connection with victims and those who serve them gives us a unique understanding of their needs and the vital importance of these continued investments.

The purpose of this testimony is to request an investment of the full authorized amount of **\$568.5 million** in the Violence Against Women Act (VAWA) and the release of **\$2.6 billion** from the Victims of Crime Act Fund administered by the U.S. Department of Justice in the FY 2017 Budget.

**Incidence, Prevalence, Severity and Consequences of Domestic and Sexual Violence.** The crimes of domestic and sexual violence are pervasive, insidious and life-threatening. In 2011, the Centers for Disease Control and Prevention (CDC) released the first-ever National Intimate Partner and Sexual Violence Survey, which found that domestic violence, sexual violence, and stalking are widespread. Domestic violence affects more than 12 million people each year, and nearly three in ten women and one in four men have experienced rape, physical violence, or stalking in his or her lifetime. The terrifying conclusion of domestic violence is often murder, and every day in the U.S. an average of 3 women are killed by a current or former intimate partner.<sup>i</sup> The cycle is perpetuated as approximately 15.5 million children are exposed to domestic violence every year.<sup>ii</sup> One study found that men exposed to physical abuse, sexual abuse and adult domestic violence as children were almost four times more likely to have perpetrated domestic violence as adults.

In addition to the terrible cost of domestic and sexual violence to individual victims and their families, these crimes cost taxpayers and communities. According to the Centers for Disease Control, based on 1999 figures, the cost of intimate partner violence exceeds \$5.8 billion each year, \$4.1 billion of which is for direct health care services.<sup>iii</sup> Translating this into 2016 dollars, based on the Bureau of Labor Statistics Consumer Price Index, the annual cost to the nation is over \$9 billion per year. In addition, domestic violence costs U.S. employers an estimated \$3 to \$13 billion annually.<sup>iv</sup>

Despite this grim reality, we know that when a coordinated response is developed and immediate, essential services are available, victims can escape from life-threatening violence and begin to rebuild their lives. To address unmet needs and build upon their successes, VAWA programs and the Victims of Crime Act fund release should receive significant increases in the FY 17 Commerce, Justice, Science Appropriations bill.

**The Need for Increased Funding to Maintain Programs and Bridge the Gap.** At a Congressional briefing in March 2016, NNEDV released *Domestic Violence Counts* (the Census), a 24-hour national snapshot of domestic violence services. The report revealed that in just one day, 71,828 victims of domestic violence received services; over 12,197 requests for services went unmet due to lack of funding and resources. That same year, domestic violence programs reported that they had laid off nearly 1,235 staff positions. Of the staff members that were laid off 79% were direct service positions, such as case managers, advocates, shelter staff, and child advocates. Programs also reduced or eliminated 1,936 services in the past year ranging from prevention services, therapy, to child welfare advocacy. I urge you to look at the full results at [nnedv.org/census2015](http://nnedv.org/census2015). For those individuals who are not able to find safety, the consequences can be dire, including homelessness or continued exposure to life-threatening violence. In order to meet the immediate needs of victims in danger and to continue to prevent and end domestic violence, VAWA funding must be increased and additional funds must be released from VOCA.

### **VICTIMS OF CRIME ACT (VOCA) FUNDING**

VOCA uses non-taxpayer money from the Crime Victims Fund for several programs that serve victims of crime, including state formula victim assistance grants. These funds, which are generated by fines paid by federal criminals, support services to 4 million victims of all types of crimes annually, through 4,400 direct service agencies such as domestic violence shelters, rape crisis centers, and child abuse treatment programs. Additional VOCA funds are critically needed to respond to the crisis caused by the dangerous lack of available services for victims of domestic and sexual violence.

With an obvious need for increased funding, and a balance of more than \$11 billion dollars in the Fund, we were pleased that the committee released \$3.04 billion in VOCA funds in FY '16. Now is the time to maintain a long-term, logical and consistent basis for determining the annual VOCA cap in order to release additional money for the purpose Congress intended and for which it has been collected. The balance in the Crime Victims Fund is more than enough to significantly increase VOCA funding without jeopardizing the Fund's future sustainability.

We urge you to request that the committee set the annual VOCA funding release level at no less than the average amount deposited into the Fund over the three previous fiscal years, which is approximately \$2.6 billion for fiscal year 2016. We urge you to release \$2.6 billion from the VOCA fund in FY17 to address the urgent needs of victims of crime.

FY 16 Appropriations transferred VOCA funds to VAWA and the President's FY 17 proposal recommends the same transfer. We oppose VOCA funds being transferred to other CJS accounts, as this reduces vital funding for direct victim services.

Additionally, we urge you to establish a federal funding stream from VOCA for tribes. Individuals on tribal lands experience disproportionately high rates of domestic and sexual violence and desperately need funding for victim services.

Finally, we request report language that would expand the purpose areas of the Office of Victims of Crime's discretionary funding (10603(c)) to include innovative and needed victim services such as hotlines and helplines, nationwide or multi-State crime victim services, and services for U.S. citizens who are victims of crimes committed outside of the United States. Previously, Congress has appropriated \$12 million for this purpose and the President request \$25 million in FY 17.



## **VIOLENCE AGAINST WOMEN ACT (VAWA)**

**Violence Against Women Act (VAWA) – \$568.50 million funding request.** Since its passage in 1994, VAWA has been the cornerstone of our nation's response to domestic violence. VAWA has contributed to substantial progress toward ending domestic violence. Despite this progress, an unconscionable need remains for victim services. The progress and promise of VAWA, and related programs aimed at addressing domestic and sexual violence, can only be fulfilled if the programs receive continued investment through the appropriations process. We have highlighted the following programs as key priorities and we urge you to support full funding for these and all VAWA programs as you work on the FY 17 CJS bill:

### **VAWA STOP Program – \$222 million funding request**

VAWA's STOP Grant Program is at the core of effective coordinated community responses to domestic violence and sexual assault. These coordinated responses help hundreds of thousands of victims find safety and get the services they need to start over, while holding perpetrators accountable. As the foundational VAWA program, the STOP program awards funds to every state and territory through a formula-based system. States use this STOP funding for law enforcement, prosecution, and courts training and response. Many states establish special units in law enforcement agencies and prosecutors' offices to address domestic and sexual violence. Victims benefit from services including advocacy, crisis intervention, local crisis hotlines, counseling and support, and victim witness notification. A 2014 report to Congress revealed that the STOP grant program helped 431,244 victims of domestic violence, sexual assault, dating violence and stalking; funded over 2,200 staff; and provided professional training for over 200,000 individuals. Increased investment in STOP will allow communities to expand their lifesaving homicide reduction efforts, continue to improve their law enforcement and prosecution responses, and serve more victims. We urge you to request \$222 million to support these essential, comprehensive services. We also request report language that would exempt the STOP program from being subject to the Prison Rape Education Act (PREA) penalty, which would cut 5% of this program's funding in states that are not in compliance with PREA

### **Legal Assistance for Victims (LAV) – \$57 million funding request**

Research indicates that the practical nature of legal services gives victims long-term alternatives to their abusive relationships. However, the retainers or hourly fees for private legal representation are beyond the means of most victims of domestic violence, dating violence, sexual assault and stalking. Legal services are second only to medical services as the most-requested need of victims. Sadly, of all women who reported needing legal services, 64% received no assistance from an attorney.<sup>v</sup> The LAV program is the only federally funded program designed to meet the legal needs of victims. Targeted increases to the LAV program are a sound investment in long-term solutions to violence. We urge you to provide \$57 million for this program to support legal help for victims.

### **Rural Grant program – \$50 million funding request**

The Rural Grant Program supports services for victims of domestic violence and sexual assault living in rural and isolated areas. Rural victims face unique barriers, including lack of access to child care, legal services, and public transportation, under-resourced law enforcement, and a shortage of safe shelter and services. Funding for this program has either been cut or remained stagnant for the last several years despite the great need and a number of states becoming newly eligible through the most recent VAWA reauthorization. We urge you to provide \$50 million for this program.

### **Transitional Housing program – \$35 million funding request**

This vital VAWA program helps communities in every state offer victims a safe place to begin to rebuild their lives. In just one day in 2015, 40,302 adults and children were housed in domestic violence transitional housing programs. On the same day, however, 7,728 requests (63% of the unmet requests) for emergency shelter or transitional housing were denied due to a lack of resources. The extreme dearth of affordable housing produces a situation where many victims of domestic violence must return to their abusers because they cannot find long-term housing, while others are forced into homelessness. Increased investment in the Transitional Housing program will allow more states and localities to ensure that victims do not have to make these unfathomable choices. We urge you to provide \$35 million for this program.

### **Grants to Encourage Arrest (GTEAP) – \$73 million funding request**

GTEAP helps communities develop and sustain a seamless and comprehensive criminal justice response to domestic violence, enhancing victims' safety and holding perpetrators accountable. GTEAP encourages state, local, and tribal governments and state, local, and tribal courts to treat domestic violence, dating violence, sexual assault, and stalking as serious violations of criminal law requiring the coordinated involvement of the entire criminal justice system. The homicide reduction initiative set aside (\$4 million) is designed to address the risk of homicide of abuse victims, especially those in escalating domestic violence situations. Additionally, a set aside for firearms lethality initiative will allow communities to address the deadly combination of firearms and domestic violence. Increased investment in GTEAP to \$73 million will allow communities to continue this lifesaving work.

### **Sexual Assault Services Program – \$40 million funding request**

The Sexual Assault Services Program (SASP) is the only federal funding source dedicated to providing direct services to adult and minor victims of sexual violence and is distributed through a state formula grant. Services include hotlines, crisis intervention, advocacy, and accompaniment through medical and legal systems. Increased funding will help eliminate waiting lists and respond to the unmet needs of victims. We urge you to provide \$40 million for this vital program.

### **Remaining VAWA programs – full funding (see linked chart)**

All VAWA programs work together to improve the system-wide response domestic and sexual violence and to meet the unique and pressing needs of victims. VAWA programs should be funded at their full authorization levels, as indicated in the funding chart below.

### **Conclusion**

These programs work together to prevent and end domestic and sexual violence. While our country has made continued investments in the criminal justice response to these heinous crimes, we need an equal investment in the human service, public health and prevention responses in order to holistically address and end the violence. These vital, cost-effective programs help break the cycle, reduce related social ills, and will save our nation money now and in the future.

<sup>1</sup> Bureau of Justice Statistics (2013). *Intimate Partner Violence: Attributes of Victimization, 1993-2011* (Special Report NCJ243300)

<sup>2</sup> McDonald, R., et al. (2006). "Estimating the Number of American Children Living in Partner-Violence Families." *Journal of Family Psychology*, 30(1), 137-142.

<sup>3</sup> National Center for Injury Prevention and Control. *Costs of Intimate Partner Violence Against Women in the United States*. Atlanta (GA): Centers for Disease Control and Prevention; 2003.

<sup>4</sup> Bureau of National Affairs Special Rep. No. 32, *Violence and Stress: The Work/Family Connection* 2 (1990); Joan Zorza, *Women Battering: High Costs and the State of the Law*, *Clearinghouse Rev.*, Vol. 28, No. 4, 383, 385.

<sup>5</sup> National Center for Injury Prevention and Control, Centers for Disease Control and Prevention, *Intimate Partner Violence in the United States — 2010* (2014) at 56.

**Testimony of RADM Jonathan White, USN (Ret.)  
President and CEO of the Consortium for Ocean Leadership  
Before the House Appropriations Committee's Subcommittee on Commerce,  
Justice, Science and Related Agencies Regarding NSF, NOAA and NASA  
March 25, 2016**

On behalf of the Consortium for Ocean Leadership, I appreciate the opportunity to discuss the Fiscal Year 2017 (FY17) federal science budget for the National Science Foundation (NSF), the National Oceanic and Atmospheric Administration (NOAA), and the National Aeronautics and Space Administration (NASA). Ocean Leadership represents the leading ocean science, education, and technology institutions, with the mission to shape the future of ocean sciences. Ocean science strengthens our national security, supports a safe and efficient marine transportation system, underpins our economy, and furthers our understanding of complex ocean and coastal ecosystems. We respectfully request the subcommittee provide no less than \$7.96 billion for NSF (including full funding for geosciences); \$2.03 billion for Earth Sciences at NASA; and \$6.0 billion for NOAA. These funding provisions are essential to our future security and economic prosperity.

As Congress addresses federal investments in the face of constrained budgets, it is important to recognize and maintain support for basic and applied research as a core federal responsibility. This federal investment must be a priority given that our nation's science- and technology-based economy strongly relies on a foundation built upon scientific advances, both within specific disciplines as well as across disciplines. Historic federal investment in basic research and development has been critically important to advancing our science superiority on the world stage as well as growing our economy, both of which can and should be built upon in the FY17 appropriations process. Investing in earth, ocean, and atmospheric sciences – collectively known as the geosciences – are opportunities for the American taxpayer to address global issues while maintaining U.S. primacy in science and technology, as well as benefitting the U.S. economy, national security, and public safety. Geosciences are found across the federal family, in: NSF's Geoscience Directorate, NOAA's Office of Oceanic and Atmospheric Research, and NASA's Earth Science Division; with each agency partnering, leveraging, and building upon each other's data and information. The ocean science and technology community urges Congress to look to the future of our nation. With geosciences contributing \$100 billion to U.S. GDP in 2012<sup>1</sup> with an expected increase to \$127 billion by 2022<sup>2</sup>, it is clear that these scientific disciplines are valuable to our economy.

### **National Science Foundation**

NSF is the premier federal agency tasked with supporting basic scientific research, and has been a primary force in providing support for discoveries that have driven our nation's economy through innovation. In fact, 70% of Nobel Laureates since 1950 have received federal funding from NSF at one time<sup>3</sup>. Historically, Congress has appropriated top line numbers for the agency, refraining from directing the course of the agency's research agenda or setting science or infrastructure priorities for the agency. We hope that this policy will continue so the Foundation can continue to make decisions based on the highest quality peer-reviewed science, rather than

<sup>1</sup> Wilson, C. E. (2014). The Status of the Geoscience Workforce. American Geosciences Institute: Alexandria, VA. p. 110.

<sup>2</sup> Wilson, C. E. (2014). The Status of the Geoscience Workforce. American Geosciences Institute: Alexandria, VA. p. 110.

<sup>3</sup> Cordova, France, 2016. Testimony before U.S. House of Representatives Committee on Science. <https://science.house.gov/sites/republishers.science.house.gov/files/documents/HHRG-114-SY15-WState-FCordova-20160322.PDF>

politics. For example, through this method of federal science support, NSF's physical science, computer science, and geoscience basic research have resulted in the development of radar systems, satellites, and computer models used by other federal agencies which have improved weather and ocean forecasting; and ultimately saved countless lives and livelihoods. Given the tremendous impact that natural hazards have on our nation's economy and public welfare, we believe that investing in the geosciences is critical to advance our knowledge of the planet, while at the same time investing in social and behavioral sciences can improve our ability to understand and communicate key scientific findings and risks to the public and policymakers, who must deal with a rapidly changing planet. Additionally, with NSF providing 64% of all funding for basic geoscience research at U.S. universities<sup>4</sup> and the projected 14% geoscience job growth<sup>5</sup>, it is obvious that this federal agency plays a key role in both workforce development and industry growth in the U.S.

### **National Oceanic and Atmospheric Administration**

To meet its many missions and mandates, NOAA requires timely, accurate, and sensitive observations of the planet. Given the pressures of the current fiscal climate, we are confident that NOAA can more efficiently and effectively meet its scientific requirements through partnerships with extramural academic and private sector partners that enhance and strengthen its scientific capability. Such collaborations have led to innovative and cost-effective sensor technologies, streamlined data assimilation and dissemination, improvements in our ability to understand and forecast harmful algal blooms and ocean chemistry, and to a greater understanding of how the ocean and coasts are changing over time. Accessing and partnering with the best minds of the nation to help manage resources, observe and analyze trends, make forecasts, and address critical concerns requires a greater commitment to external, competitive, and peer-reviewed grant opportunities.

As the ocean absorbs much of the heat and carbon dioxide in the atmosphere, it is crucial to better understand air-sea-ice interactions. These and other ocean and coastal observations provide data and information critical to: forecasting typhoons, hurricanes, flooding, heat waves, droughts, and wildfires; they help calibrate and validate satellite observations; they provide baselines for fisheries management, and long-term data sets on ecosystems, tides and currents, sea level change, and ocean chemistry. Without sustained observations feeding into our prediction capabilities on regional and seasonal scales, we are essentially flying blind in terms of managing resources and protecting overall public health. There are many major natural threats facing our nation, and significant challenges ahead in understanding, forecasting, and mitigating them, all of which require significant financial resources. Ocean and coastal observations require federal investment and the return on that investment includes accurate forecasts of weather and extreme events; communities that are prepared for, and can respond to, long-term changes as well as sudden events (e.g., flooding, drought); national, international, state, and local governments having science-based resource management; and weather-climate sensitive industries working with greater certainty in their business models.

### **National Aeronautics and Space Administration**

The ocean science and technology community urges the subcommittee to fund NASA's Earth Science Division at \$2.03 billion in order to support ocean science and education. NASA

<sup>4</sup> <https://www.nsf.gov/geo/about.jsp>, National Science Foundation

<sup>5</sup> 2012-2022, Status of the Geoscience Workforce Report, the American Geosciences Institute, 2014. This handout was compiled by the American Geosciences Institute (AGI), 2014.

satellites provide a view of, and data pertaining to, the planet we live on – ocean and land, atmosphere and deserts, ice sheets and mountains – all important components of a complex and changing system. Beyond interesting information and glorious imagery, NASA earth science activities facilitate and improve the forecasting leading to a national science enterprise with stellar weather, climate and natural hazard predictive capabilities.

### **Geoscience Education**

The interdisciplinary nature of oceanography (e.g., physics, biology, chemistry, geology, engineering, computer and information science) requires dedicated education and training opportunities for the next generation of ocean scientists. We believe that the mission agencies mentioned above should continue to have a robust role in education and training as they are best situated to anticipate changing trends and challenges. With 20% of American jobs requiring a high level of STEM understanding<sup>6</sup> (26 million) and 63% of high school graduates not meeting the college readiness benchmark for science<sup>7</sup>, this is a timely investment. We can ill afford to have a 135,000 geoscience worker shortage over the next decade – as the Workforce Research team at the American Geosciences Institute have calculated – workers that are vital for national and international security, energy and weather forecasting industries, as well as natural resource managers, land-use planners and first-responders. Additionally, diversity continues to be a challenge for the scientific community overall; we need to develop a workforce whose composition better resembles the broader population. We greatly appreciate the support this committee has given to STEM education programs at NSF, NOAA, and NASA, and encourage this support to extend into the geoscience directorate at NSF, which aids the development of thousands of early career geoscientists.

### **Summary**

Geosciences impact everyday Americans every day; and across the nation, across science disciplines, across the federal family, it is clear that robust and sustained federal investments in geosciences are key to addressing global and national challenges, underpinning new and growing economies while maintaining and supporting existing ones, and improving technologies that preserve lives and livelihoods, persons and property. As the subcommittee drafts the FY17 spending bill, we hope that you reflect on the fact that the bulk of the intellectual capacity regarding the ocean resides within the academic research community. Peer-reviewed extramural research is the most efficient and effective vehicle for providing our policy makers and our commercial partners with the expertise, information, and data necessary to address the emerging challenges facing our nation. We also hope that you will continue to permit science priorities and decisions to be made by the scientific community, a proven method that has enabled America's thriving, innovation economy for decades.

Mr. Chairman and members of the Subcommittee, we greatly appreciate the opportunity to share our recommendations, and I encourage bipartisan support for geoscience funding, including ocean science and technology, in the FY17 appropriations process and into the future.

Below is a list of the institutions that are represented by the Consortium for Ocean Leadership:

<sup>6</sup> The Hidden STEM Economy, Metropolitan Policy Program, Brookings Institute, 2013.

<http://www.brookings.edu/~media/research/files/reports/2013/06/10%20stem%20economy%20rothwell/thehiddenstemeconomy610.pdf>.

<sup>7</sup> ACT standardized test, "The Condition of STEM 2014," ACT, <http://www.act.org/stemcondition/14/pdf/National-STEM-Report-2014.pdf>. This handout was compiled by the American Geosciences Institute, 2015.

**Alabama**

Dauphin Island Sea Lab

**Alaska**

Alaska Ocean Observing System

Arctic Research Consortium of the United States (ARCUS)

North Pacific Research Board

University of Alaska Fairbanks

**California**

Aquarium of the Pacific

Bodega Marine Lab

Esrí

Hubbs-SeaWorld Research Institute

L-3 MariPro, Inc.

Liquid Robotics, Inc.

Monterey Bay Aquarium Research Institute

Moss Landing Marine Laboratory

Naval Postgraduate School

Romberg Tiburon Center for Environmental Studies

Stanford University

Teledyne

University of California, San Diego (Scripps)

University of California, Santa Barbara

University of California, Santa Cruz

University of Southern California

**Colorado**

Cooperative Institute for Research in Environmental Sciences (CIRES)

**Connecticut**

University of Connecticut

**Delaware**

Mid-Atlantic Regional Association Coastal Ocean

Observing System (MARACOOS)

University of Delaware

**Florida**

Earth2Ocean, Inc.

FAU Harbor Branch Oceanographic Institute

Florida Institute of Oceanography

Mote Marine Laboratory

Nova Southeastern University

University of Florida

University of Miami

University of South Florida

**Georgia**

Savannah State University

Skidaway Institute of Oceanography of the University of Georgia

**Hawaii**

University of Hawaii

**Illinois**

John G. Shedd Aquarium

**Louisiana**

Louisiana State University

Louisiana Universities Marine Consortium (LUMCON)

**Maine**

Bigelow Laboratory for Ocean Sciences

The IOOS Association

University of Maine

**Maryland**

John Hopkins University

National Aquarium

University of Maryland Center for Environmental Science

**Massachusetts**

Massachusetts Institute of Technology

University of Massachusetts, Dartmouth

University of Massachusetts, Lowell

Woods Hole Oceanographic Institution

**Michigan**

University of Michigan

**Mississippi**

University of Mississippi

University of Southern Mississippi

**New Hampshire**

University of New Hampshire

**New Jersey**

Monmouth University Urban Coast Institute (UCI)

Rutgers University

**New York**

Columbia University (LDEO)

Stony Brook University

**North Carolina**

Duke University Marine Laboratory

East Carolina University

North Carolina State University

University of North Carolina at Chapel Hill

University of North Carolina at Wilmington

**Oregon**

Oregon State University

**Pennsylvania**

Pennsylvania State University

**Rhode Island**

University of Rhode Island

**South Carolina**

South Carolina Sea Grant Consortium

University of South Carolina

**Texas**

Fugro

Harte Research Institute

Sonardyne, Inc.

Texas A&M University

University of Texas at Austin

**Virginia**

CARIS, USA

CNA

College of William and Mary (VIMS)

Institute for Global Environmental Strategies (IGES)

Old Dominion University

U.S. Arctic Research Commission

**Washington**

Sea-Bird Scientific

University of Washington

**Washington, DC**

Marine Technology Society

National Ocean Industries Association (NOIA)

Southeastern Universities Research Association (SURA)

**Wisconsin**

University of Wisconsin-Milwaukee School of Freshwater Sciences

**Testimony in Support of FY 2017 Funding for the  
National Science Foundation**

March 29, 2016

***Submitted by:***

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***Submitted to:***

House Committee on Appropriations  
Subcommittee on Commerce, Justice, Science and Related Agencies

The Natural Science Collections Alliance appreciates the opportunity to provide testimony in support of fiscal year (FY) 2017 appropriations for the National Science Foundation (NSF). We encourage Congress to provide the NSF with at least \$8.0 billion in FY 2017.

*The Natural Science Collections Alliance is a non-profit association that supports natural science collections, their human resources, the institutions that house them, and their research activities for the benefit of science and society. Our membership consists of institutions that are part of an international community of museums, botanical gardens, herbaria, universities, and other institutions that contain natural science collections and use them in research, exhibitions, academic and informal science education, and outreach activities.*

Scientific collections are a vital component of our nation's research infrastructure. Whether held at a museum, government managed laboratory or archive, or in a university science department, these scientific resources contain genetic, tissue, organismal, and environmental samples that constitute a unique and irreplaceable library of the Earth's history. The specimens and their associated data drive cutting edge research on significant challenges facing modern society, such as improving human health, enhancing food security, and understanding and responding to environmental change. Collections also inspire novel interdisciplinary research that drives innovation and addresses some of the most fundamental questions related to biodiversity.

The institutions that care for scientific collections are important research centers that enable scientists to study the basic data of life, conduct modern biological, geological, and environmental research, and provide undergraduate and graduate students with hands-on training opportunities.

According to the federal Interagency Working Group on Scientific Collections, "scientific collections are essential to supporting agency missions and are thus vital to supporting the global

research enterprise.” In recognition of the importance of collections, the Office of Science and Technology Policy issued a memo in 2010 that directed federal agencies to budget for the proper care of collections. “Agencies should ensure that their collections’ necessary costs are properly assessed and realistically projected in agency budgets, so that collections are not compromised.”

Preservation of specimens is not only in the best interest of science, it is also in the best interest of taxpayers. Proper care of existing scientific collections is typically more cost effective than recollecting the information. Moreover, preservation of specimens and associated data allows for integration into new research. Specimens that were collected decades or centuries ago are often used in cutting edge research in the fields of genetics, biodiversity, and human health.

The NSF plays a unique role in protecting and expanding access to our nation’s scientific collections. NSF supports research that utilizes existing collections as well as studies that gather new natural history specimens. NSF’s Biological Sciences Directorate (BIO) and Directorate for Geosciences (GEO) support research and student training opportunities in natural history collections.

NSF support for natural history collections has resulted in innovative discoveries. For example, in 1993 a deadly disease appeared in the southwestern United States. The agent was Hantavirus, but its origin was unknown. Using NSF-supported biological collections at Texas Tech University and University of New Mexico, researchers discovered that certain rodents naturally carried the disease. When rodents became much more abundant following an El Niño weather event in 1992, the animals spread into human environments. This brought more rodents into contact with people and increased the transmission of Hantavirus. With the vector known, new cases of Hantavirus were largely prevented by reducing transmission opportunities.

Another example of state-of-the-art work supported with NSF funding is digitization of high priority U.S. specimen collections. NSF’s investment in digitization is enabling the scientific community to ensure access to and appropriate curation of irreplaceable biological specimens and associated data, and has stimulated the development of new computer hardware and software, digitization technologies, and database management tools. This effort is bringing together biologists, computer science specialists, and engineers in multi-disciplinary teams to develop innovative imaging, robotics, and data storage and retrieval methods. These tools will expedite the digitization of collections and contribute to the development of new products or services of value to other industries.

In addition to supporting research, NSF’s STEM education programs enhance the ability of museums, botanic gardens, zoos, and other research institutions to provide science learning opportunities for students. The Advancing Informal STEM Learning program is furthering our understanding of informal science, technology, engineering, and mathematics (STEM) education outside of traditional classrooms. The program is especially valuable at broadening participation in science.



**Conclusion**

Continued investments in the NSF programs that support natural science collections research and education are essential if we are to maintain our global leadership in innovation. Sustained investments in NSF will help spur economic growth and new discoveries and continue to build scientific capacity at a time when our nation is at risk of being outpaced by our global competitors. Please support an investment of at least \$8.0 billion for NSF for FY 2017.

Thank you for your thoughtful consideration of this request and for your prior support of the National Science Foundation.



**Outside Witness Testimony in Support of FY 2017 Funding for the  
National Science Foundation**

**March 31, 2016**

**Submitted by:**  
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**and**  
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**Submitted to:**  
**House Committee on Appropriations**  
**Subcommittee on Commerce, Justice, Science and Related Agencies**

The American Institute of Biological Sciences (AIBS) appreciates the opportunity to provide testimony in support of fiscal year (FY) 2017 appropriations for the National Science Foundation (NSF). We encourage Congress to provide NSF with at least \$8.0 billion in FY 2017.

*The AIBS is a nonprofit scientific association dedicated to advancing biological research and education for the welfare of society. AIBS works to ensure that the public, legislators, funders, and the community of biologists have access to and use scientific information that will help them make informed decisions. Founded in 1947 as a part of the National Academy of Sciences, AIBS became an independent, member-governed organization in the 1950s. Today, AIBS has individual members and more than 140 member organizations with a combined individual membership that exceeds 200,000. The organization is headquartered in Reston, Virginia, with a Public Policy Office in Washington, DC.*

Biological research is in our national interest. Increasing our knowledge of the processes that regulate how genes, cells, tissues, organisms, and ecosystems function is vitally important to our collective efforts to improve the human condition. Food security, public health, bio- and national security, and sound environmental management are all informed by biological research. Our economic growth is also enhanced as a result of biological research, and the translation of this research into impactful formal and informal education programs fosters the development of

the scientifically and technically informed workforce employers seek.

Over the past 50 years, roughly half of the economic growth at private businesses in the United States has resulted from advances in knowledge resulting from research and development. Evidence for this is the fact that in the last decade, 80,000 U.S. patents were based on discoveries arising from research initially funded by the NSF. Additionally, data show that employers continue to seek workers with scientific and technical skills. Since 1960, growth in U.S. employment in science and engineering has outpaced growth in total employment, increasing by an average rate of 3 percent per year.

The NSF is an important engine powering our nation's economic growth. Through its competitive, merit reviewed research programs, the NSF invests in the development of new knowledge that will provide solutions for the most challenging problems facing society. Moreover, NSF investments in the development of research tools and facilities enable the U.S. research community to remain global leaders in innovation.

Some discoveries arising from NSF funded research include:

- Development of an adhesive derived from the carnivorous sundew plant. Nanoparticles in the plant's adhesive stick to human cells and have the potential for healing wounds, regenerating damaged tissues, and improving synthetic adhesives.
- Scientists at one of the 26 Long Term Ecological Research sites funded by NSF found that dead wood in forests serve many ecological functions. Tens of millions of dollars per year have been saved by leaving unmerchantable dead wood in place instead of removing it during logging.
- NSF is stimulating the development of new imaging and data management tools to digitize biodiversity collections. This initiative is enabling the nation's 1,600 biological diversity collections, held at universities and natural history museums, to make images and data associated with millions of specimens available for novel research and education programs.

Other examples of federally-funded research that has benefited the public are chronicled in a 2016 AIBS report, "Biological Innovation: Benefits of Federal Investments in Biology," which is available at [https://www.aibs.org/public-policy/biological\\_innovation\\_report.html](https://www.aibs.org/public-policy/biological_innovation_report.html).

The NSF plays a central role in science education. Support for the scientific training of undergraduate and graduate students is critically important to our research enterprise. Students learn science by doing science. These experiences are very often a result of NSF programs designed to engage students in the research process.

Initiatives such as the Graduate Research Fellowship and the Faculty Early Career Development program are important parts of our national effort to recruit and retain the best and brightest researchers. Other programs, such as the NSF Research Traineeship and Postdoctoral Research Fellowships in Biology, provide opportunities to train biologists in high priority areas like data-enabled science and research using biological collections.

To fully realize the benefits of NSF-supported research and to remain at the forefront of innovation, the government must make new and sustained investments in the NSF. Unpredictable swings in funding can disrupt research programs, create uncertainty in the research community, and stall the development of the next great idea.

Funding rates have become “dangerously low,” according to NSF. When pre-proposals are taken into account, the funding rate for some program areas within the Directorate for Biological Sciences are in the single digits. The NSF is the primary federal funding source for biological research at our nation’s universities and colleges, providing nearly 68 percent of extramural federal support for non-medical, fundamental biological and environmental research at academic institutions. Competition is good, but when success rates fall this low many scientists become demoralized and begin to look for alternative pursuits.

Funding NSF at \$8.0 billion in FY 2017 is a step toward resolving the issues that slow scientific discovery. New investments would allow the agency to increase the number of proposals it funds each year by a modest one percent.

Thank you for your thoughtful consideration of this request and for your prior efforts on behalf of science and the National Science Foundation.

**Statement of  
PAULETTE BROWN, PRESIDENT  
AMERICAN BAR ASSOCIATION**

**Prepared for the  
SUBCOMMITTEE ON COMMERCE, JUSTICE, SCIENCE & RELATED AGENCIES  
U.S. HOUSE OF REPRESENTATIVES COMMITTEE ON APPROPRIATIONS**

**Addressing the  
LEGAL SERVICES CORPORATION**

**March 28, 2016**

**REQUEST:** Chairman Culberson, Vice Chair Aderholt, Acting Ranking Member Honda, and Subcommittee Members, I am Paulette Brown, President of the American Bar Association (ABA) and a partner at Locke Lord LLP. I am submitting this statement today on behalf of the ABA, which has over 400,000 members. The ABA recommends funding for the Legal Services Corporation (LSC) at \$475 million, the Administration's Fiscal Year 2017 budget request.

For the implementation of "Equal Justice Under Law," our government has a true partner in the ABA. We have created an annual ABA Day of Service in October, operate an ABA Center for *Pro Bono*, produce an annual award program for *pro bono* work, established the Commission on the Future of Legal Services, and host, with our colleagues at the National Legal Aid and Defender Association, the annual Equal Justice Conference.

To strengthen legal aid is to strengthen the rule of law. I do not just pay lip service to legal aid and to *pro bono* work; I am very passionate about these services and try every day to remember and live "to whom much is given, much is required." In my third year of law school I personally participated in a clinical program which partnered with Essex/Newark Legal Services in New Jersey. Following my graduation and for several years thereafter, I worked *pro bono* for that same legal services office, successfully representing dozens of tenants in an important landlord/tenant case. Later, as a member of the ABA Litigation Section, I helped train young legal services lawyers and other lawyers who provided *pro bono* services. Furthermore, I have provided *pro bono* services to members of our military. However, *pro bono* services themselves are not sufficient to meet the needs of our vulnerable.

**HISTORICAL NEED:** First of all, I want to thank the subcommittee for gradually restoring LSC's budget—5.4%, 2.6%, and 2.6% increases over the past three years.

However, the FY'16 LSC appropriation is still 15.7% lower than it was in 2010 (in FY'16 dollars), while the number of people qualifying for assistance is about 25% over the past decade. Compare also the FY'16 funding of \$385 million to LSC's average appropriation of \$663,944,870 (in FY'16-adjusted dollars) during the 1980s. LSC seriously needs an increase.

Furthermore, robust funding for the LSC is desperately needed because other funding sources have diminished since the country's economic downturn. All states, save Alabama, Florida, and

Idaho, now provide state-government funding for legal aid programs. However, as a lingering effect of the recession, in some states state funding is indeed way down due to declines in filing fees supporting legal aid. Revenue from Interest on Lawyers' Trust Accounts (IOLTA) has also decreased approximately 80% nationally in the past nine years, causing their grants for legal aid programs to diminish by 68%.

Funding for the Legal Services Corporation has been a high priority issue for the ABA for four decades. The ABA has supported the provision of legal services to those who cannot afford them since establishing the Standing Committee on Legal Aid and Indigent Defendants (SCLAID) in 1920. Supreme Court Justice Lewis F. Powell, while serving as ABA President in 1964, called for a major expansion of the nation's legal services, and the ABA worked closely with many others to achieve this goal, culminating in President Nixon signing LSC into law in 1974.

I commend your efforts for low-income Americans now when the need for legal aid is near an all-time high. Civil legal aid is a constituent service performed in every state and congressional district in the country, complementary to your own constituent services. I believe there is an opportunity for legal aid programs to work more closely with your constituent services staffers to help constituents resolve their legal matters, thus potentially alleviating the need for other federal program funds. In so doing, LSC funding provides long-term benefits.

The local legal aid programs help people at or below 125 percent of federal poverty levels. In 2016, federal poverty levels are \$11,880 for an individual and \$24,300 for a family of four. The most recent data from the U.S. Census Bureau show that over 95.2 million Americans—one in three—qualified for civil legal aid at some point in 2014.

Significantly, studies show that 50-80 percent of all eligible people seeking legal aid services are turned away due to lack of resources. That impediment seriously hamstrings justice in our legal system. In fact, in 2015 the World Justice Project ranked the United States 65<sup>th</sup> of 102 countries in its Rule of Law Index for civil justice access, behind Moldova, Zimbabwe, and Venezuela. LSC's modest funding increases over the past three fiscal years have bolstered civil justice access by allowing offices to stay open and a few statewide self-help centers to expand. LSC is the largest provider of civil legal assistance to low-income Americans. LSC grants fund legal aid programs in each of the fifty states, the District of Columbia, Puerto Rico, and American Samoa.

Chairman Culberson, Texas, for example, has the second highest number of people in poverty and ranks 50th in the number of attorneys for people in poverty (many in rural areas). As a result, legal aid is critical for the state. The entire Texas Supreme Court has concluded that increased legal services funding is indispensable to enhancing access to justice in that state.

**AREAS OF HELP:** Legal aid helps clients with health concerns, consumer and finance matters, family law, obtaining an education, individual rights, income maintenance, juvenile law, tribal law, employment, disability, housing matters like foreclosures and evictions, and more.

**BENEFICIARIES:** Several groups in particular are beneficiaries of legal aid services:

1. Veterans returning from war,
2. Older Americans,

3. Rural Americans,
4. Women, constituting nearly 70% of clients, and
5. Natural-disaster victims.

Returning military veterans and families, such as over 1.6 million US troops who have served in Iraq and Afghanistan since 2001, receive legal aid for consumer issues, employment, family law, homelessness, and benefits for service-related injuries that can take months or years to obtain.

Older Americans often need help as victims of financial fraud. Additionally, seniors commonly have housing issues. Acting Ranking Member Honda, California faces a high foreclosure rate. Housing matters alone account for 44% of California LSC grantees' total caseloads. Nationally, housing issues account for the second-largest percentage of LSC grantees' total caseload (28%). This includes landlord-tenant disputes, prevention of foreclosures, renegotiation of home loans and mortgages, and assistance to renters whose landlords are undergoing foreclosures. *Last year LSC aided over half a million people with housing issues nationally.*

For example, Nicole Perez, an attorney with Legal Aid of Los Angeles, spent a year and a half saving an elderly disabled widow of a Vietnam veteran from foreclosure. The elderly woman's husband had suffered from the effects of Agent Orange poisoning, but had been denied benefits. Nicole and her colleagues successfully blocked the forced sale of the house and managed to get the \$45,000 in retroactive benefits and nearly \$1,500 in ongoing monthly payments from the VA, ensuring the elderly widow would be financially secure in her home.

Rural Americans oftentimes have difficulty obtaining needed legal assistance. Mr. Chairman, Texas has a notable rural population and LSC is working to ensure those rural areas have a means of accessing legal aid. LSC grantees are sometimes the only means by which low-income citizens living in more remote areas can receive legal aid. This year LSC developed a Rural Summer Legal Corps that will commence in the summer of 2016.

Women often gain assistance with the most frequent type of case: family law issues. More than one third of all cases deal with family law matters such as domestic violence, custody, and guardianship for children without parents.

Disaster victims really see value in the LSC's work. In my home state of New Jersey, LSC provided storm-related legal assistance for victims of Hurricane Sandy, including help with improper evictions, identity verification, denial or inadequate reimbursement of insurance claims, delays in repairs, and home repair scams. Each year natural disasters throw thousands into poverty, create extensive legal entanglements, and can overwhelm legal aid programs.

**SPECIFIC EMPHASES:** This year's request emphasizes the *Pro Bono* Innovation Fund (PBIF), first funded in FY'14. The PBIF seeks to develop replicable *pro bono* legal service innovations. The thousands of hours of *pro bono* service private lawyers provide each year in a public-private partnership are critical but totally insufficient to replace federal LSC funding. LSC provides the framework through which most *pro bono* services are delivered. These projects create partnerships with local law schools, community organizations, rural populations, and corporate attorneys. Having this federal money to leverage more *pro bono* efficacy is critical.

LSC is also innovating with its improved use of technology in LSC's Technology Initiative Grants (TIG) program. It has provided efficiencies associated with statewide websites and enhanced case management systems.

In accordance with its strategic planning, LSC this past year followed through on its commitment to strong management and accountability for federal funds. Examples include new purchasing and contracting protocols, mandatory training on conflicts of interest and whistleblower policies, and updated records-management policy and retention schedules.

**COST/BENEFIT:** In

March 2015 the Tennessee Bar Association published a new report entitled "Economic Impact of Civil Legal Aid Organizations in Tennessee." The chart at right summarizes the principal economic benefits that civil legal aid programs provide.

The report and chart reveal \$11.21 of economic benefit per dollar invested.

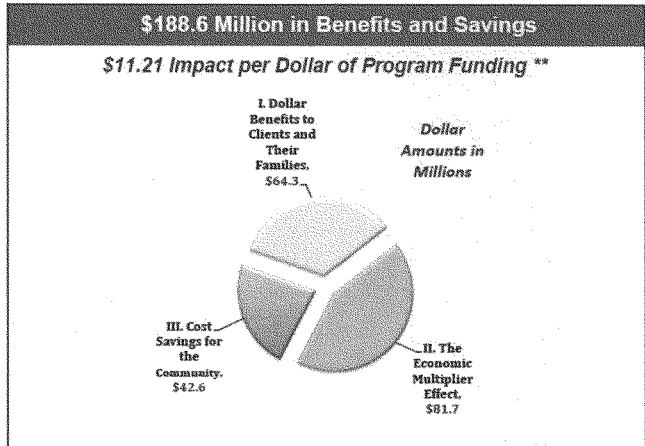
Eighteen percent of the

benefits are attributable to preventing foreclosure, which itself offsets the cost of *all* legal aid, providing a 2-to-1 return. Foreclosure lowers property values, damages consumers' credit, soaks up the time and resources of lenders, and reduces municipalities' property tax collections. Preventing foreclosure is a measureable public good.

Likewise, preventing domestic violence saves a victim the trauma and costs of "medical treatment, counseling, police protection, and other support," valued at over ten thousand dollars per victim per year.

The savings for the communities alone merit the cost. Likewise do the direct client and family benefits. On top of the community savings and direct client and family benefits, the well-recognized economic multiplier effect guarantees the value of LSC appropriations.

**CONCLUSION:** As the economy revives, LSC funding should also revive. Down 15.7% from 2010 (in FY'16 dollars) and with 25% more people qualified for legal aid, LSC is in serious need of an increase. Certainly no decrease is in order. Given LSC's excellent benefit/cost ratio and exemplary management and accountability for federal funds, we encourage you, while still considering the fiscal issues the country faces, to fund this meritorious program at \$475 million.





**Outside Witness Testimony**

**Andrew Reamer, Research Professor, George Washington Institute of Public Policy, George Washington University, Washington, DC**

**Prepared for the Subcommittee on Commerce, Justice, Science, and Related Agencies,  
Committee on Appropriations, U.S. House of Representatives**

**Regarding the American Community Survey, Census Bureau, U.S. Department of Commerce**

**March 30, 2016**

Chairman Culberson, Acting Ranking Member Honda, and members of the Subcommittee, I am writing in support of the President's budget request for \$251 million to conduct a mandatory response American Community Survey (ACS) in Fiscal Year 2017.

As a research professor at the George Washington Institute of Public Policy, I focus on policies that promote U.S. economic competitiveness. From this perspective, I find that a fully functioning ACS is essential to the health of the nation's economy and democracy and the efficiency of its national, state, and local governments. I also encourage the Subcommittee to recognize that, as Canada's recent experience demonstrates, elimination of the mandatory response requirement will ensure the non-usability of ACS data for large swaths of U.S. geography and substantial misallocation and waste of billions of dollars in federal spending.

The Census Bureau is actively seeking to minimize respondent burden through engaging the services of the National Academy of Sciences. I ask the Subcommittee to read the National Academy's findings and the Census Bureau's response when they are available.

I wish the Subcommittee to understand that concerns about the invasiveness of the ACS and its predecessor questions in the decennial census have been expressed in Congress on a regular basis since the questions were first proposed in 1790 by Congressman James Madison and revisions were suggested in 1800 by Vice President Thomas Jefferson. Even so, for 226 years, Congress has continuously supported a mandatory response to ACS-type questions.

For the Subcommittee's edification, I am attaching interactions on the House floor in 1790 and 1850 regarding the value of census questions for public policy and concerns about privacy. I ask it to please note that in 1850, congressional members seeking to remove the mandatory response did so out of fear that the information collected would be used against the maintenance of slavery.

I very much appreciate the opportunity to provide this testimony, hope the Subcommittee finds it of value, and look forward to the Subcommittee's decision with regard to the ACS.

Highlights are in gray

1145

## GALES &amp; SEATON'S HISTORY

1146

H. OF R.]

Census of the Union.

[FEBRUARY 2, 1790.]

States, in the State of North-Carolina, returned with amendments, in which the Senate requested the concurrence of the House; these amendments were agreed to, except one amendment only.

By the amendments of the Senate to the foregoing act a clause is introduced for the purpose of further suspending the operation of the tonnage act, respecting the vessels belonging to Rhode Island, till the first day of April next.

TUESDAY, February 2.

THEODORE BLAND, from Virginia, appeared and took his seat.

The engrossed bill for securing the copy-right of books to authors and proprietors was read the third time; but, on motion, was recommitted to Mess. BOUDINOT, SHERMAN, and SYLVESTER.

## CENSUS OF THE UNION.

Mr. FOSTER, from the Committee to whom was recommitted the bill providing for the enumeration of the inhabitants of the United States, reported the bill with amendments; and the House proceeded to the consideration thereof.

Mr. LIVINGMORE apprehended this plan was too extensive to be carried into operation, and divided the people into classes too minute to be readily ascertained. For example, many inhabitants of New Hampshire pursued two, three, or four occupations, but which was the principal one depended upon the season of the year, or some other adventitious circumstance; some followed weaving in the spring and summer, but the making of shoes was the most predominant in the fall and winter; under what class are these people to be thrown, especially if they joined husbandry and carpenter's work to the rest? He was confident the distinction which the gentleman wished to make could not be performed; he was therefore against adding additional labor, and consequently, incurring additional expense, whether the work was executed or not. Besides this, he apprehended it would excite the jealousy of the people; they would suspect that Government was so particular, in order to learn their ability to bear the burthen of direct or other taxes, and under this idea, they may refuse to give the officer such a particular account as the law requires, by which means you expose him to great inconvenience and delay in the performance of his duty.

Mr. SEDGWICK understood, when the bill was recommitted, it was intended to specify every class of citizens, into which the community was divided, in order to ascertain the actual state of the society. Now, he had to ask, why it was not extended further? He thought the learned professions should be returned, as well as the others, and would furnish as grateful information as the return of any other. The state of society could be ascertained, perhaps, in some degree, from observing these proportions.

Mr. MADISON.—If the object to be attained by this particular enumeration be as important in the judgment of this House, as it appears to

my mind, they will not suffer a small defect in the plan to defeat the whole. And I am very sensible, Mr. Speaker, that there will be more difficulty attendant on the taking the census, in the way required by the constitution, and which we are obliged to perform, than there will be in the additional trouble of making all the distinctions contemplated in the bill. The classes of people most troublesome to enumerate, in this schedule, are happily those resident in large towns, as the greatest number of artisans live in populous cities and compact settlements, where distinctions are made with great ease.

I take it, sir, that in order to accommodate our laws to the real situation of our constituents, we ought to be acquainted with that situation. It may be impossible to ascertain it as far as I wish; but we may ascertain it so far as to be extremely useful, when we come to pass laws, affecting any particular description of people. If gentlemen have any doubts with respect to its utility, I cannot satisfy them in a better manner, than by referring them to the debates which took place upon the bills intended collaterally to benefit the agricultural, commercial, and manufacturing parts of the community. Did they not wish then to know the relative proportion of each, and the exact number of every division, in order that they might rest their arguments on facts, instead of assertions and conjectures? Will any gentleman pretend to doubt but our regulations would have been better accommodated to the real state of the society than they are? If our decisions had been influenced by actual returns would they not have been varied, according as the one side of the other was more or less numerous? We should have given less encouragement in some instances, and more in others; but in every instance, we should have proceeded with more light and satisfaction.

The gentleman from Massachusetts, (Mr. SEDGWICK) has asked, why the learned professions were not included: I have no objection to giving a column to the general body. I think the work would be rendered more complete by the addition, and if the decision of such a motion turned upon my voice, they shall be added. But it may nevertheless be observed, that in such a character they can never be objects of legislative attention or cognizance. As to those who are employed in teaching and inculcating the duties of religion there may be some indelicacy in singling them out, as the General Government is proscribed from interfering, in any manner whatever, in matters respecting religion; and it may be thought to do this, in ascertaining who, and who are not ministers of the Gospel. Conceiving the extension of the plan to be useful, and not difficult, I hope it may meet the ready concurrence of this House.

Mr. PAGE thought this particular method of describing the people, would occasion an alarm among them; they would suppose the Government intended something, by putting the Union to this additional expense, beside gratifying an idle curiosity; their purposes cannot be sup-

FEBRUARY 3, 1790.]

*Rule of Naturalization.*

[H. OF R.]

posed the same as the historian's or philosopher's—they are statesmen, and all their measures are suspected of policy. If he had not heard the object so well explained on this floor, as one of the people he might have been jealous of the attempt, and as it could serve no real purpose, for he contended, if they were now acquainted with the minutia, they would not be benefited by it. He hoped the business would be accomplished in some other way.

Mr. MADISON thought it was more likely, that the people would suppose the information was required for its true object, namely to know in what proportion to distribute the benefits resulting from an efficient General Government.

The schedules were now agreed to by the House, and the bill, with an alteration respecting the allowance to the Marshal of Maine, was ordered to be engrossed.

A message from the Senate, with the bill for giving effect to the laws of the United States in the State of North Carolina, was received: whereupon, the said bill was ordered to be enrolled, and Messrs. GILMAN and WHITE were appointed a committee for that purpose.

WEDNESDAY, February 3.

The engrossed bill for enumerating the inhabitants of the United States was read the third time, and then ordered to lie on the table.

#### RULE OF NATURALIZATION.

The House then went into a Committee of the whole on the bill establishing a uniform rule of Naturalization. Mr. BALDWIN in the Chair. The first clause enacted, that all free white persons, who have, or shall migrate into the United States, and shall give satisfactory proof, before a magistrate, by oath, that they intend to reside therein, and shall take an oath of allegiance, *and shall have resided in the United States for one whole year*, shall be entitled to all the rights of citizenship, except being capable of holding an office under the State or General Government, which capacity they are to acquire after a residence of two years more.

Mr. TUCKER moved to strike out the words "and shall have resided within the United States for one whole year;" because he conceived it the policy of America to enable foreigners to hold lands, in their own right, in less than one year; he had no objection to extending the term, entitling them to hold an office under Government, to three years. In short, the object of his motion was, to let aliens come in, take the oath, and hold lands without any residence at all.

Mr. HARTLEY said, he had no doubt of the policy of admitting aliens to the rights of citizenship; but he thought some security for their fidelity and allegiance was requisite besides the bare oath; that is, he thought an actual residence of such a length of time as would give a man an opportunity of esteeming the Government from knowing its intrinsic value, was essentially necessary to assure us of a man's

becoming a good citizen. The practice of almost every State in the Union countenanced a regulation of this nature; and perhaps it was owing to a wish of this kind, that the States had consented to give this power to the General Government. The terms of citizenship are made too cheap in some parts of the Union to say, that a man shall be admitted to all the privileges of a citizen, without any residence at all, is what can hardly be expected.

The policy of the old nations of Europe has drawn a line between citizens and aliens: that policy has existed to our knowledge ever since the foundation of the Roman Empire; experience has proved its propriety, or we should have found some nation deviating from a regulation inimical to its welfare. From this it may be inferred, that we ought not to grant this privilege on terms so easy as is moved by the gentleman from South Carolina. If he had gone no further in his motion than to give aliens a right to purchase and hold lands; the objection would not have been so great; but if the words are stricken out that he has moved for, an alien will be entitled to join in the election of your officers at the first moment he puts his foot on shore in America, when it is impossible, from the nature of things, that he can be qualified to exercise such a talent; but if it was presumable that he was qualified by a knowledge of the candidates, yet we have no hold upon his attachment to the Government.

Mr. SHERMAN thought that the interests of the State where the emigrant intended to reside ought to be consulted, as well as the interests of the General Government. He presumed it was intended by the Convention, who framed the Constitution, that Congress should have the power of naturalization, in order to prevent particular States receiving citizens, and forcing them upon others who would not have received them in any other manner. It was therefore meant to guard against an improper mode of naturalization, rather than foreigners should be received upon easier terms than those adopted by the several States. Now, the regulation provided for in this bill, entitles all free white persons, which includes emigrants, and even those who are likely to become chargeable. It certainly never would be undertaken by Congress to compel the States to receive and support this class of persons; it would therefore be necessary that some clause should be added to the bill to counteract such a general proposition.

Mr. PAGE was of opinion, that the policy of European nations and States respecting naturalization, did not apply to the situation of the United States. Bigotry and superstition, or a deep-rooted prejudice against the Government, laws, religion, or manners of neighboring nations had a weight in that policy, which cannot exist here, where a more liberal system ought to prevail. I think, said he, we shall be inconsistent with ourselves, if, after boasting of having opened an asylum for the oppressed of all

gratiate a loan upon uncommonly reasonable terms. Is it not right, wise, that whenever the United States propose to borrow money that they should be able to exhibit, in an authentic form, the immense amount of property, real and personal, that is always responsible for the payment of the debt? Is it not desirable to know the mineral resources of the country? Both in peace and in war, the industrial pursuits of the country? The machinery of the country and its mechanical sciences and skill, with a view to their protection and encouragement? The gentleman from Georgia, the other day, took occasion to say that no government could stand or ought to stand, that brought its power in conflict with the property of the people. The property to which the gentleman referred, is property vested in slaves, which he was pleased to estimate at fifteen hundred millions of dollars. I deemed the expression indefensible, revolutionary; but since the sentiment is advanced in this House, and seems to be entertained by others than the gentleman from Georgia, it is quite desirable to know the ages as well as the numbers of the slaves, with the view of ascertaining their value, and comparing that property with other property which the same gentlemen seem to think deserves no protection, no encouragement. It is quite desirable to know the positive and relative yield of agricultural productions in different sections of the country, in order that we may see whether it be wise to graft slavery upon the immense territories which we have lately acquired. I know of no one fact, which the tables prepared by the chairman on the Judiciary would not be useful for us to know. Let there be light, was the command of Infinite Wisdom at the creation of the world. The light of knowledge to be revealed here, in the government of a small part of the world; and the cry of gentlemen here is, let there be darkness.

There is in the free States a class of men entitled to all the privileges of citizenship there, who, if they set foot in certain other States of this Union, are liable to be imprisoned, and in certain contingencies to be sold as slaves, because it has pleased God not to bestow upon them quite so white a skin as some of us wear. Is it not desirable to know how numerous this class is, with the view of ascertaining the practical value of a great principle of the Constitution? Would it not be worth while, if it were in our power, to ascertain the lineage and the place of birth of the African race, in order, amongst other things, to ascertain whether our laws excluding slaves from foreign parts are violated or observed? Is it not desirable to know the prevalent diseases of the country, whether they result from local causes or unsanitary trades, so that if need be, we may discourage the unhealthy trade, drain the marsh? Is it not desirable, with reference to the health of the country and our quarantine laws, to ascertain whether diseases are imported, and whether they are the result of unhealthy food, or scarcity, or the crowded state of the vessel? Will not an inquiry into the diseases of the country tend to elucidate these facts? Give us light upon all these subjects; we shall not obtain a surplus of information; and it seems to me that he that understates this statistical information, which is sought by the bill under consideration, has not well considered the elements out of which the character, the power, of a country is made.

Mr. WOODWARD said, he apprehended that the gentleman who had just resumed his seat [Mr. CLARK] had given an intimation as to what was the true object of asking a great variety of the inquiries contained in this bill. It was to know what facts might be alleged in derogation of a certain description of labor in a certain portion of this Union. It was not necessary for the gentleman to have made the intimation; other gentlemen had been more prudent in discussing this question. It was not necessary, because no man could be blind to the fact, that the object of a part of this bill—it was not so with every part of it—but the object of particular parts of the bill was to procure and circulate over the country themes for abolition declamation. Who doubted that it was for that purpose? The object was to select the blemishes in the social system of the South, and harp upon these until the imagination of the country should be wholly prepossessed, and every favorable feature lost sight of. In this way any community in the world might be scandalized and brought into disrepute.

Mr. Woodward of South Carolina

But he would not dwell upon this subject; other occasions might be presented for this purpose. He proposed, for the present occasion, to look into the constitutional power of Congress, which he conceived had not yet fully been developed to the House. The power given to Congress in the Constitution was "to lay and collect taxes, duties, imposts and excises." A proviso was attached to this power, "but all duties, imposts and excises shall be uniform throughout the United States." Taxes were not enumerated in the list which came under the proviso: taxes, duties, imposts and excises were to be laid and collected, but duties, imposts and excises were to be uniform. What was the object of that distinction? It was to distinguish between the subjects of direct taxation which were to be apportioned upon one principle, and the other three forms of taxation which were to be apportioned upon another principle. Taxes, here, meant direct taxes, and direct taxation was a taxation upon persons or upon lands which could be ascertained by enumeration and through geographical science. The latter could be as well ascertained by a person residing in the city of Washington as by any deputy surveyor who might be sent into any particular State. Capitation or direct taxes (which were synonymous in the Constitution) should be apportioned to federal numbers; duties, imposts and excises should be uniform, i. e. equal taxes to wealth. There was no necessity of ascertaining the value of the property in a State with a view to levying duties, imposts or excises. An enumeration of the inhabitants was necessary for the purpose of capitation, and it was necessary to know the quantity of land for the purpose of a direct tax upon it. Would they need the aid of a censor to ascertain the number of inhabitants and the amount of geographical area? It was ridiculous for the gentleman to look to this as a source of knowledge. As a measure of legislation it had been imposed upon Congress by the Constitution, but no well informed man ever looked to such a source for light and knowledge: they were more securely derived from other sources. The statistics of the States, certain known laws of relation between population and wealth in the same country, where conditions were identical, or the difference of conditions well understood and appreciated, would be a safer reliance for accurate knowledge than the returns of any United States censor.

Mr. STRONG interposing, (and the floor being yielded for explanation,) said he desired to ascertain the gentleman's views, for Mr. (Mr. R.) hoped to have an opportunity of being heard more at length upon the subject. He wished to know whether the gentleman from South Carolina held, that Congress, in exercising the power of laying a direct tax (assuming what the gentleman had already declared, that it was a capitation or a land tax) was required to impose an equal tax upon land which was worth one dollar an acre, and that which was worth two hundred dollars an acre; and if it were not so, whether the inquiry relative to the value of property in lands contained in these schedules were not necessary? And secondly, he would like to ask the gentleman whether, in order to obtain anything like an uniform, equal tax throughout the country by an excise, it was not necessary to know what the personal property was?

Mr. WOODWARD (resuming) said they could not discuss every point that arose under a question in an hour; and he confessed he could not consent to any gentleman's indicating the particular topics which he should discuss. He did not mean to be discourteous. He would, however, notice one of the inquiries of the gentleman in regard to the value of the lands. He said that the attempts of the United States to survey each man's land, and fix the value of it, was a needless thought of intermeddling with the rights of the people. The aggregate amount of a tax upon land was apportioned among the States irrespective of the value of their lands. Rich land or poor land, sand-barren or alluvion, a State had to pay so much, if it had so many federal population. How the tax should be distributed among the people of a State was a question of interior justice and equality, and would depend upon the relative valuations which the local government would place upon different descriptions of land. What greater security could a people have that justice would be done them in this respect, than to have the matter left with their own local government, where each class of land-holders

would be represented, and could see that justice was done there?

Now duties, imposts, and excises were required by the Constitution to be uniform throughout the United States—that was, that the same law should exist for all the States, and that property, wealth should be the criterion of taxation, requiring all persons in all communities to pay according to their wealth and not according to their federal numbers. Now what necessity had Congress for this information in levying this sort of taxation upon wealth? Was it necessary? It would be convenient, but was it, in the language of the Constitution, "necessary and proper?" for the language of the Constitution was not necessary or proper, but necessary and proper. It was not necessary and proper to know the amount of property and wealth in order to know how to levy taxes. Could they not levy a tax of ten cents per gallon upon whiskey without knowing the whole amount of whiskey in the United States?

But suppose that this knowledge was wanted—suppose it was necessary and proper, was our censor, he asked, more reliable authority than the State authorities? Would gentlemen assume that a State Legislature—the Senate and House of Representatives of a State, sanctioned by all the authorities of a State—were less likely to give true information than was the censor appointed by the Federal Government? The gentleman from New York wanted the information from federal officers. A sovereign State was unworthy to be trusted, was too mendacious to be relied upon in the transactions of this Government. It was a matter of convenience he (Mr. W.) conceded, but in no sense a matter of necessity or proper—while it should be both.

But to go a little further: admitting that the General Government had to obtain this information, the information sought, according to gentlemen's own view of the subject, should be confined to that which was just the subject of taxation—if the taxing power was what it was intended to exercise. The taxing power ought not to have a greater scope than the subject of the power. What had the subject of taxation to do with the institution of a censorship modeled after that of Rome—for putting all manner of indelicate questions to persons touching the private family relations, manners, morals, &c.? That was what was proposed. Gentlemen did not confine themselves to what was the subject of their power. Now, gentlemen who talked of incidental power, misconceived the nature of things. There could be no such thing as an incidental power. Incidence was between the different parts of the same subject, and all the incidents made the whole subject. The power was one and indivisible, and covered the whole subject with all its incidents. Take for instance the coinage of money: the subject consisted of everything necessary and proper to coining—buildings, machinery, laborers and chemical tests. There was not a distinct power for each one of these incidents, but a single power covering the whole. Mr. Madison gives this exposition of the method of construing the Constitution. Nothing could be more evidently true. An opposite method violated every law of human science and reasoning. Each power in Congress was a whole and complete power, as much so as any power in a State. It must not, however, transcend its subject. It would be absurd to suppose that any power could properly do so.

Could they send your censor to inquire of an old maid how old she was, and to require her to tell upon oath; and if she did not that she should be fined, indicted?

Mr. THOMPSON, of Pennsylvania, said there was no such provision in the bill.

Mr. WOODWARD said if he was mistaken, he thanked the gentleman for the correction. But at all events, if they exempted her from affidavit, they did not from fine, and imprisonment if she did not pay it. A woman who had borne an illegitimate child had to tell it; if she refused she was to be fined. [He here read the sixteenth section of the bill.]

Mr. THOMPSON said there was no provision in the bill as to children born. If, when the gentleman came to read it, there was anything in it so illegitimate as the gentleman's argument, he would himself give up the bill.

Mr. WOODWARD said he would state, once for all, that he had not the tables from the Senate

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before him, but only the tables reported by the House committee; and if there was not an inquiry into that subject, he had been misled. He asked the gentleman if there was not an inquiry how many children a woman had borne?

Mr. THOMPSON. There is none.  
Mr. STRONG. There is in regard to slaves.  
Mr. THOMPSON. I beg my colleague's pardon; there is no such inquiry. There is such a provision in the Senate bill.

Mr. WOODWARD. Then let this part of my speech go for the Senate; they have quite as much need of it there as here, in relation to this subject.

There was a delicacy (Mr. W. continued) in every refined mind that revolted from having everything made known in regard to private family relations, even where there was no guilt or scandal. What families did not conceal from one another, or from friends? They were unwilling to have proclaimed in the market, or spread upon public archives. How old a person was, how much property he had, how many children his wife had lost, were questions annoying to a sensitive mind, even when put by a private person, and much more so when demanded with a personality by a censor of Government for publication. Having gone thus far, who knew where they would stop? Go read the history of the Roman censorship; see, from a modest beginning, what an odious tyranny it became in process of time—the most odious with which the Roman people have been oppressed. Compare its progress, from its beginning to its ending, with the progress you have made thus far, and see in how short a time you will reach the greatest excess. Next you will inquire into all church matters—who go to church, how often, &c.

The policy of this bill was to lay the foundation for a system of direct taxation. Mr. W. then proceeded to show that the resources of the country by imposts were gradually diminishing. Imposts (he said) were a tax not upon wealth, but upon the difference between domestic and foreign cost of production. This difference was continually diminishing in the United States, and would presently vanish, and with it the foundation of imposts. What was now a revenue duty, would presently be a prohibitory duty. To raise revenue, therefore, all duties must be progressively reduced. But the manufacturing interests could not submit to this reduction. They must, therefore, look out for other sources of revenue; they must look to direct taxes.

He would beg gentlemen to look at one feature in our commercial relations, and industrial and agricultural pursuits at home. We had a climate comprehending every climate in Europe—capable of producing everything that belonged to the soil of Europe, and at a cheaper rate than any other country in the world. Look at the article of sugar. Twenty years ago sugar would have borne an import duty of one hundred per cent. What was the state of the case now? Half of that sum would amount to an absolute prohibition; and in five years hence, sugar might be exported from the United States, and would be incapable of bearing any duty. In Louisiana, Texas, and the southwestern portion of the country, owing to the soil, the climate, and the African slave labor, sugar would then be made twenty per cent. cheaper than in any other portion of the world.

Mr. BAYLY (in his seat) and exported to—  
Mr. WOODWARD, (continuing.) Exported—yes, exported to the end of the world in ten years from this time. And if in ten years hence, any duty at all should be laid upon that article, it must be an export duty. Had Congress the right to lay such a duty? But he would not dwell on this particular branch of the subject. What he contended for was, that this information was not desired with a view to impose taxes, and that we could not, from the power to enumerate the people, derive the power to enumerate the property—one being expressed in order to be created, the other should have been expressed if it was designed to be created. But admitting the principle that we could take the value of property, there was no authority to go beyond it. Under the Constitution of the United States, the word "census" was defined. So was the word "treason." Next everything else to be defined by political science. It defined "census" and "treason" in order to limit them. The word "census" is defined in the first instance, and then, in a subse-

quent clause, it said "census" or "enumeration." That was a special census. A census literally defined, comprehended more than an enumeration; but our census was a mere enumeration, and this particular census which was mentioned in the Constitution, was defined to be an enumeration. And well might the framers of the Constitution have been careful in defining the extent of the power—remembering, as they did, all fresh from the study of Roman history and of political history everywhere—that they might be cautious, when they remembered the character under the Roman government of that censorship which was commenced and half developed in the bill under consideration. If gentlemen limited themselves to an enumeration of the value of property, the bill would not be so objectionable. If they went beyond that, they would disappoint themselves. He made no threats. But there were hundreds of thousands of persons in the United States, who would not answer the questions which this insolent censorship might put to them. He would not answer them. No obtrusive officer should come into his house and ask for this information, of their own free will, it was probable they might do so. But when it came upon them in the form of a demand—when fines were to be levied upon them if they did not tell how they got sick, how they died, and how they got cured—if they would not tell all about their marriages, all about the birth of their children—and when they were told that unless they answered all these things, they would go to jail, the case assumed an entirely different aspect. This was one objection to the bill—that the information sought for in these particulars would be unreliable; it would not be full and perfect. There was once a member here who refused to vote. It was attempted to make him vote. Did the attempt succeed? And it was less clear that the right existed to make that member vote, than to make a woman tell how old she was? Which was the clearest right? And if, in the former case, there was a failure, how was it to be expected that in the latter the attempt should be successful? If the point was yielded in this House, would gentlemen contend for it with a woman? These things were all odious. The inquisitorial officer was, of all others, and under every Government, the most odious. It was a bore to be catched by anybody—but for a family to be inquired upon by a Government officer—asked thousand questions was insufferable; and the country would resist it. It was this which made the Roman Empire odious—and it was this which would make this Government odious. And he had made these remarks to show that information thus collected would be unreliable, because it would not contain the whole truth.

Mr. CARTTER said he saw no particular propriety or impropriety in the introduction of the census bill; the census bill; statistics reported to the various denominations are periodically ascertained and published by the religious bodies themselves, and nothing can be added to the information already possessed by means of the census. As no information is to be derived that we do not already possess, the less the Government has to do with religion the better; with this view I am not disposed to support this branch of the bill. Nor am I disposed to vote for any question in the schedule that is unnecessary to elicit information or that would offend delicacy. I am compelled however, to differ from the gentleman from South Carolina, [Mr. Woodward,] in the assumption that an inquiry as to the name of a man, woman, or child is impertinent or impudent. A name is given to a person for the purpose of entitling the person, and none are reluctant to be recognized by it but those who have done something to disgrace it. But over the etiquette of the Senate there shall be no ground of contention. There is no gentleman upon this floor who is disposed to insult his constituents; and I apprehend these objections are taken, not because the matter in itself is objectionable, but with the view of defeating one of the objects of the bill. Whatever may be my vote upon the immaterial details of the bill, I am willing and anxious to vote for all its sub-

stantial inquiries, and forward as far as I am able its principal objects.

The tables embrace a call for information of a substantial character. A proper answer to them will furnish knowledge necessary to a proper understanding of the rapidly-unfolding resources and diverse interests of the country—information important to the citizens of the nation in their daily business relations, and indispensable to a correct discharge of our duty as Representatives of the people. We enact no law that does not affect the interests of some portion of the country, especially appropriations affecting the Treasury. It is obvious to every member here, that the correct discharge of legislative duty must depend upon a full understanding of these varied interests of the country.

The constitutional doubts which have been expressed by several gentlemen as to the power of Congress in providing a law for the enumeration of the inhabitants of the United States, to also provide for ascertaining its wealth, have presented no difficulty to my mind. The course of argument which they have found it necessary to pursue in resisting the passage of this bill, acknowledges indirectly the power. It is acknowledged by all, that if we were engaged in the work of creating a law by the force of which direct taxes were to be imposed, it would be constitutional to inquire into the value of the property, and the character of the interests to be taxed. In a word, the power to tax involved the power, and enjoined the duty, of ascertaining and understanding the subject of taxation. This argument, although designed to explain away the constitutional power to call for statistical information in this connection, in my judgment, confirms it. If the power to levy direct taxes, imposts and excise duties—power expressly given in the Constitution—implies the necessity and authority to inquire into the subject of tax, impost, and excise, the same reason and authority will justify the inquiry in subordinate to the legislative enforcement of indirect taxation through customs. This Government is exercising the highest power of sovereignty in taxing and collecting from the industry of this country, or some other, annually, the sum of from thirty-five to forty-five millions of dollars. I am aware that there is a school of political economists, who have endeavored to inculcate the doctrine that this sum, the product of revenue and protective imposts, is not a tax upon the consumer, and does not reach the people in the form of taxation. That it is created out of nothing, and fait son droit.

I am not a disciple of this faith. I believe this sum to be a tax, and a tax upon the consuming portion of our people, and especially that portion not engaged in the fabrication of the merchandise protected by the economy of the tariff. If correct in this view of the subject, and I have no doubt the sentiment is the judgment of a majority of the House, we are exercising the power of taxation every session of Congress; and as an incident to its exercise, have the right and obligations of duty to require that we should be informed of the various interests affected by tariff imposts, and their relations with each other. Sir, if there are reasons in the process of direct taxation for ascertaining the condition of the interests affected—a proposition conceded—there are double reasons for acquiring the same knowledge in the imposition of indirect taxation through a tariff. In the first instance, the tax-payer is admonished by a direct demand for money, that he is paying tribute to the Government, and that admonition is transferred from him to his representative, the result of which could not be otherwise than a watchful guardianship over the public treasure and faithful economy in its disbursement. In the latter case, the tax is drawn from the consumer insidiously and insensibly by way of meat, drink and clothing, daily, from the first day of January to the last day of December, morning, noon and night. The fund thus imperceptibly extracted is irretrievably expended.

There is a mode of ascertaining tangibly where this taxation falls, and when assessing the equalizing its burdens. An important item in the history is a full disclosure of the various resources and wealth of the Republic, which is the first step to a correct knowledge of the wants of the people representing these various interests. For instance, it is a part of the current business history of this

Mr. Cartter of Ohio

Testimony of Research!America to the House Committee on Appropriations Subcommittee on Commerce, Justice, Science, and Related Agencies Concerning FY17 Appropriations for NSF

Submitted for the Record, March 31, 2016

Contact: Caitlin M. Leach, Director of Policy and Advocacy, cleach@researchamerica.org

On behalf of Research!America, a public education and advocacy alliance committed to strengthening our nation's scientific enterprise and accelerating the pace of medical progress, thank you for this opportunity to comment on funding within the jurisdiction of the Subcommittee on Commerce, Justice, Science and Related Agencies. We appreciate the Subcommittee's stewardship over such a critical subset of our nation's discretionary funding priorities. As you consider fiscal year 2017 (FY17) allocations, we request that the National Science Foundation (NSF) receive at least \$8 billion to support our nation's continued global leadership in the scientific arena.

Over the past 65 years, NSF has faithfully pursued its mission to promote the progress of science, strengthen the national defense, and advance national health and prosperity. NSF's portfolio, which is intentionally diverse to maximize the returns on science investment, spans biology, economics, mathematics, computer science, the social sciences, engineering and geosciences. We firmly believe that robust funding for NSF is a sound strategy for advancing our nation's strategic interests in an increasingly complex global landscape.

### **NSF's Footprint**

The NSF funds basic and applied research in more than 1,800 academic institutions in all 50 states, the District of Columbia, and four U.S. territories. NSF supported an estimated 350,000 students, teachers, researchers, and postdoctoral fellows in FY15 alone. Nearly 90% of NSF funding is allocated to grants or cooperative agreements to researchers through a competitive merit review process supporting a variety of scientific and engineering disciplines including 65% of federally funded social science research and 89% of computer science research. Since 1950, the NSF has supported well over 200 Nobel Prize winners, including three in 2015 in chemistry and economics. The studies supported by the NSF bear on virtually every sector of our economy, support cyber security and other crucial areas of national security, and factor importantly into the productive use of "big data" and other highly promising avenues of research.

### **NSF is Pivotal to Continued U.S. Leadership in Science and Engineering**

To maintain the United States' role as the global leader in scientific research and education, the NSF has supported a number of high risk, but transformative projects that have resulted in groundbreaking discoveries in 2015. In an effort to connect physical therapy with wounded veterans too far from treatment facilities, NSF funded researchers at the University of Texas developed a rehabilitation system that uses real-time video, 3D computer-generated worlds, and sensory feedback devices to re-create a physical therapy session between a patient and a

therapist. This new innovation in telemedicine allows for rehabilitation from broken bones, stroke, and Parkinson's disease over long distances through high-speed networks.

Advancements in telemedicine, along with other modernization in treatments and their delivery to patients, necessitate top notch privacy and security measures. The NSF sponsored exciting innovations in the area of cyber security and encryption this past year which are pivotal for keeping the government, private sector, and individual citizens safe while online. Much of this work would have never been possible without previous NSF investments in computer science, math, statistics, psychology, and economics.

**NSF is Crucial to Training the Next Generation of American Scientists and Innovators**

Our nation's continued leadership globally is inexorably linked to our strength in the fields of science, technology, engineering and math (STEM) education. NSF fosters future American leaders in these strategically important disciplines. Since 1952, the NSF has supported more than 50,000 students through Graduate Research Fellowships and has provided grant support to thousands of postdoctoral fellows and young investigators. The agency also engages in innovative educational initiatives like the Partnership for Undergraduate Life Science Education (PULSE), a public-private collaboration that has contributed importantly to ensuring undergraduate biology education keeps pace with major advances in this critical area of science. Efforts like these set the stage for future success as our nation seeks to accelerate the pace of medical progress.

We hope these examples demonstrate the strategic importance of NSF and the benefits of supplying the agency with at least \$8 billion in FY17 to support our nation's unrivaled scientific enterprise. Research!America appreciates the difficult and complex task facing the subcommittee as it seeks to prioritize funding in a manner that best serves the American people, and hope you will call on our organization if additional information would prove useful.

Thank you for your leadership and consideration.

**Mr. Donald F. Kennedy, Jr.**  
**Chair, Regional Information Sharing Systems (RISS) National Policy Group**  
*Prepared for the*  
*Subcommittee on Commerce, Justice, Science, and Related Agencies*  
*House Committee on Appropriations*

The mission of the **Regional Information Sharing Systems (RISS)** is to assist local, state, federal, and tribal criminal justice partners by providing adaptive solutions and services that facilitate information sharing, support criminal investigations, and promote officer safety. With the ongoing threats to safety and security, it is important to adequately fund proven and trusted programs such as RISS. It is respectfully requested that RISS be funded in **FY2017 at \$48.5 million.**

RISS is composed of six regional centers and the RISS Technology Support Center. RISS works regionally and nationwide to respond to the unique crime problems of each region while strengthening the country's information sharing environment. More than **9,000 local, state, federal, and tribal** law enforcement and public safety agencies are members of RISS. RISS supports efforts against organized and violent crime, gang activity, drug activity, terrorism, human trafficking, identity theft, cybercrime, and other regional priorities. **Hundreds of thousands of law enforcement officers and criminal justice professionals use RISS services and resources every day to assist with their efforts in fighting crime.**

For more than 40 years, RISS has demonstrated its value and benefit to the criminal justice and law enforcement community (visit [www.riss.net/Impact](http://www.riss.net/Impact) to view shared successes). RISS provides critical investigative and analytical services, secure access to intelligence systems and investigative data from all levels of government, technology and field-based solutions, and essential officer safety resources.

**RISS—An Excellent Return on Investment for Our Nation**

RISS provides diverse and specialized investigative services and resources to help identify, apprehend, and prosecute criminals. Specifically, RISS:

- Develops **analytical products**, such as specialized charts, crime scene diagrams, telephone toll analysis products, and financial analysis reports.
- Provides **digital forensics and audio/video enhancements**.
- Loans **specialized investigative equipment**, such as specialized cameras, recorders, and other devices.
- Researches **intelligence and investigative resources** and provides a **comprehensive report of findings** to officers.
- Provides one-on-one **technical support** through RISS's field services staff.
- Provides **confidential funds** to assist officers with undercover operations and buy-busts.
- **Trains** thousands of law enforcement officers on timely and relevant topics, such as emerging crime, officer safety, and investigative techniques.
- Develops **publications** and law enforcement-sensitive **briefings**.



RISS focuses on proven results-oriented services that maximize resources. In FY2015, the RISS Centers:

- Developed **74,520 analytical products**.
- Loaned **3,562 pieces of specialized equipment**.
- Responded to **68,018 requests** for research and technical assistance.
- Trained **40,315 individuals**.
- Enabled users to conduct **5,986,456 inquiries** to RISS resources.
- Provided access to **millions of pieces of data**, including access to investigative databases, such as the RISS Property and Recovery Tracking System (**RISSProp**) and the **RISS Master Telephone Index**.

Every day, officers are using RISS to help detect, deter, prevent, and respond to crime problems. **Without these services to support law enforcement efforts, narcotics, stolen property, and other contraband, as well as violent offenders, gang members, and other criminals, might still be on our streets.** Over the last ten years, officers leveraging RISS's services arrested almost **44,000 offenders** and seized more than **\$625.9 million in narcotics, property, and currency**. **The resources and services offered by RISS are crucial** to ensure that RISS officers and agencies can solve crimes and remove criminals from our communities. The federal government has invested in RISS, and **RISS has proved to be an excellent return on that investment.**

#### **RISS—A Source for Secure and Innovative Information Sharing Solutions**

The ability to share information remains one of the most important factors to help communities address their most pressing criminal justice problems in effective ways. The RISS Secure Cloud (**RISSNET**) is a sensitive but unclassified (SBU) system that connects disparate systems, provides bidirectional sharing, and offers a single simultaneous search of connected systems. Without access to RISSNET resources and information, multijurisdictional information sharing would become difficult, leads may be lost, and some cases may not be solved timely or at all. Hundreds of resources (most owned by RISS partners) rely on the RISSNET infrastructure to share millions of records among and between law enforcement from all levels. Currently, more than **80 systems** are connected or pending connection to RISSNET. More than **38.8 million records** are available through these and other RISSNET resources. RISS has developed a number of resources accessible via RISSNET that are critical to the law enforcement community's mission, including the following:

- The **RISS Criminal Intelligence Database (RISSIntel)** provides for a real-time, online federated search of more than **40 RISS and partner intelligence databases**, including state systems, the California gang intelligence system (CalGang), and systems connected via the National Virtual Pointer System (NVPS).
- The **RISS National Gang Program (RISSGang)** consists of an intelligence database, a website, and information resources.

- The **RISS Automated Trusted Information Exchange (ATIX)** provides a secure platform for law enforcement, public safety, first responders, and the private sector to share information.
- The **RISSLeads Investigative Website** enables authorized law enforcement officers to post information regarding cases or other law enforcement issues.
- The **RISS Officer Safety Website** provides law enforcement and criminal justice users with timely officer safety information and a secure infrastructure to exchange and share officer safety-related information among agencies.
- **Secure hosted websites** enable partners to securely share information and materials. There are more than **30** secure hosted websites, including the New Jersey Office of Homeland Security and Preparedness, the MOCIC Cass Atlantic Drug Task Force, the Sacramento Criminal Recycler Apprehension Program, the Nevada Human Trafficking Task Force, and the Midwest Gang Investigators Association.

### **Saving Lives and Solving Cases Through Officer Safety Deconfliction**

Event deconfliction is the process of determining when law enforcement personnel are conducting an event in close proximity to one another at the same time. Events include law enforcement actions, such as undercover operations, surveillance, or executing search warrants. When certain elements are matched between two or more events, a conflict results. Immediate notification is then made to the affected agencies or personnel regarding the identified conflict.

Event deconfliction helps support and protect law enforcement officers in a variety of ways. Officers participating in high-risk operations are able to enhance their personal safety and the safety of those around them. Using an event deconfliction system enables officers to identify operational conflicts and collaborate with other law enforcement agencies and officers. It also safeguards community members, helps ensure operational integrity, strengthens information sharing, helps reduce risk and liability, and builds community confidence. Officers are then able to leverage each other's information and successfully apprehend criminals. Event deconfliction helps prevent "friendly fire" and helps solve investigations.

RISS recognized the importance of ensuring the safety of law enforcement officers and, in an effort to further enhance officer safety, developed the **RISS Officer Safety Event Deconfliction System (RISSafe)**. Thousands of agencies and officers use RISSafe every day. Since inception, more than **1,175,800 operations** have been entered into RISSafe, resulting in **362,000 identified conflicts**. Without the identification of these conflicts, officers might have interfered with another agency's or officer's investigation, links between cases might have been lost, or officers or citizens might have been unintentionally hurt or killed. **RISSafe is accessible and monitored on a 24/7/365 basis and available at no cost to all law enforcement agencies, regardless of RISS membership.**

Currently, **28 RISSafe Watch Centers** are operational, 22 of which are operated by organizations other than RISS. These organizations have invested resources to support this critical officer safety program.

In May 2015, the three nationally recognized event deconfliction systems—Case Explorer, SAFETNet, and RISSafe—were integrated. The partners worked in collaboration to accomplish this goal with the help of many vested partners, including the Bureau of Justice Assistance (BJA); the Office of the Program Manager, Information Sharing Environment (PM-ISE); the U.S. Drug Enforcement Administration; the High Intensity Drug Trafficking Areas (HIDTA); and many others. This milestone will further strengthen officer and citizen safety across the country.

### **RISS—An Essential Partner in Nationwide Initiatives**

RISS supports federal and nationwide initiatives that help enhance and expand efficient and effective information sharing among the criminal justice community. Examples of RISS's federal and nationwide partnerships include:

- U.S. Department of Justice
- Assured SBU Interoperability Initiative
- Global Justice Information Sharing Initiative
- National Network of Fusion Centers
- Federal Law Enforcement Training Centers
- INTERPOL
- National Association of Medicaid Fraud Control Units
- National Criminal Intelligence Resource Center
- National Motor Vehicle Title Information System
- United States Secret Service's Targeted Violence Information Sharing System

Many other partnerships have resulted in streamlined processes, increased information sharing and officer access to critical data, safer officers and communities, and the advancement of important technology solutions. Some of those are highlighted below.

As part of the **Northeast Fusion Center Intelligence Project**, RISS is connecting fusion centers' intelligence systems to RISSIntel via RISSNET. Multiple fusion center systems have been connected to RISSIntel under this project.

Through the Law Enforcement National Data Exchange (**N-DEx**) and **RISS partnership effort**, access to N-DEx is becoming available to authorized RISSNET users via the Federal Bureau of Investigation's Law Enforcement Enterprise Portal (LEEP) without an additional username or password. This capability enables officers to obtain information quickly, saves officers' time, streamlines operations, and enhances law enforcement's ability to respond to crime effectively and efficiently.

As foundational members of the SBU Working Group and the National Identity Exchange Federation, the U.S. Department of Homeland Security (DHS) Homeland Security Information Network (HSIN) and RISS have made significant progress in implementing **bidirectional secure single sign-on between the two systems**. This integration provides a streamlined approach that enables users to quickly and easily access critical information.

### **Building on RISS Successes in the Future**

At the **\$48.5-million level**, RISS will be positioned to maintain and build on its successes. Specifically, RISS will:

- Move forward with important technology initiatives in the areas of federation and bidirectional system connections (such as state systems, fusion center intelligence systems, and gang databases).
- Purchase essential network equipment to maintain and safeguard the RISS secure infrastructure.
- Expand and enhance existing RISS investigative services and RISSNET resources.
- Support RISSafe's 24/7/365 component and continue to work with partners to promote the use of event deconfliction.
- Support federal efforts and nationwide partnerships, such as those with the National Network of Fusion Centers, N-DEx, HSIN, Nlets—The International Justice and Public Safety Network, the PM-ISE, and other law enforcement stakeholders, to expand information sharing capabilities and available resources to officers and law enforcement personnel.
- Replace and obtain new specialized equipment. The equipment loan program helps save agencies money and time, while identifying leads and solving cases.
- Support emerging initiatives, such as human trafficking, cybersecurity, and school violence programs.

Funding at **\$48.5 million** will aid RISS in addressing these important initiatives and leverage proven technology, maximize trusted relationships, and help create a more secure information sharing environment. As criminals grow savvier and technologically advanced and as emerging crime problems arise, law enforcement will continue to seek effective, innovative, and trusted solutions to help them resolve and respond to criminal and terrorist activities. RISS is a necessary component of law enforcement efforts and is the “one-stop shop” to fill officers’ needs and help maximize their efforts. RISS is dedicated to ensuring the highest quality in all of its programs.

### **Conclusion**

RISS has worked diligently to seek innovative solutions to provide fast, quality-driven support to the law enforcement and public safety communities under reduced funding and is committed to finding solutions to help fill the gaps and move forward. Inadequate funding and support for RISS would significantly weaken the nation’s information sharing environment, hinder investigations, and impact the safety of our officers and our communities. It would be counterproductive to require local and state RISS members to self-fund match requirements or to reduce the amount of BJA discretionary funding. Agencies require more funding to fight the nation’s crime problem. RISS is unable to make up the decrease in funding that a match would cause, for it has no revenue source of its own. RISS is grateful to provide this testimony at your request and appreciates the support this committee continuously provides to the RISS Program.

STATEMENT OF MR. MARK BARDEN  
FOUNDER AND MANAGING DIRECTOR, SANDY HOOK PROMISE

COMMITTEE ON APPROPRIATIONS  
SUBCOMMITTEE ON COMMERCE, JUSTICE, SCIENCE, AND RELATED  
AGENCIES

March 31, 2016

As a father who lost my precious son, Daniel, when he was murdered at Sandy Hook Elementary, along with 19 of his classmates and six educators, in December 2012, I am writing to urge the Subcommittee to fund the implementation of the National Instant Background Check Systems (NICS) Improvement Amendments Act of 2007 (Pub. L. No. 110-180) at no less than the FY16 level of \$73 million.

To prevent more senseless tragedies in our communities, we have to act to stop dangerous individuals and criminals from getting guns. The Gun Control Act of 1968 (Pub. L. No. 90-618) precludes certain persons, including felons, those adjudicated mentally ill, illegal aliens, drug abusers, and those under a restraining order, from purchasing or possessing firearms. But we cannot enforce this law if we do not ensure that NICS has up-to-date records from state and federal sources.

Right now, millions of records are missing from the various databases that make up the National Instant Background Check Systems. Many states do not have the necessary resources to upload criminal history and records of prohibited individuals, which has allowed individuals to slip through the cracks. A recent study found that in six states combined, fewer than 140 mental health records had been submitted.

The NICS Improvement Amendments Act provides grants for states to upgrade their electronic databases, incentives for states to transmit electronic records to NICS, penalties for states that do not comply, and requirements for keeping NICS up-to-date, including the removal of obsolete or erroneous records. This law also provides financial incentives for states to develop “relief from disabilities” procedures for persons who have lost the right to possess a firearm due to a mental health adjudication or commitment but are later determined not to pose a danger to public safety.

While the NICS Improvement Amendments Act authorized a combined total of \$1.125 billion from FY 2009 through FY 2013, unfortunately only \$63.567 million was appropriated during that time. Meanwhile, the demand for this funding is increasing every year. We must provide adequate funding to meet this growing need.

That is why I urge you to provide no less than level funding for NICS in the FY17 CJS Appropriations bill. This funding will ensure NICS has complete and timely information to keep firearms out of the hands of individuals who cannot safely and legally possess them while also ensuring that individuals' Second Amendment rights remain secure.

Thank you for your leadership and commitment to keeping our families and our communities safe.



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**Outside Witness Testimony from:  
Society for Industrial and Applied Mathematics (SIAM)**

**Submitted by: Dr. Pam Cook  
President, Society for Industrial and Applied Mathematics (SIAM)  
&  
Dr. C. David Levermore, Vice President for Science Policy, SIAM**

**Submitted to the Subcommittee on Commerce, Justice and Science  
Committee on Appropriations,  
United States House of Representatives  
Washington, DC**

**Testimony on the Fiscal Year 2017 Appropriations  
for the National Science Foundation**

**March 31, 2016**

**Summary:** This written testimony is submitted on behalf of the Society for Industrial and Applied Mathematics (SIAM) to ask you to continue your support of the National Science Foundation (NSF) in fiscal year (FY) 2017 by providing NSF with \$8 billion. In particular, we urge you to provide strong support for key applied mathematics and computational science programs in the Division of Mathematical Sciences and the Division of Advanced Cyberinfrastructure.

**Full Statement:** We are submitting this written testimony for the record to the Subcommittee on Commerce, Justice, Science, and Related Agencies of the Committee on Appropriations of the U.S. House of Representatives on behalf of the Society for Industrial and Applied Mathematics (SIAM).

SIAM has over 14,000 members, including applied and computational mathematicians, computer scientists, numerical analysts, engineers, statisticians, and mathematics educators. They work in industrial and service organizations, universities, colleges, and government agencies and laboratories all over the world. In addition, SIAM has almost 500 institutional members, including colleges, universities, corporations, and research organizations.

First, we would like to emphasize how much SIAM appreciates your Committee's continued leadership on and recognition of the critical role of the National Science Foundation (NSF) and

*Testimony for the House Appropriations Committee – Commerce, Justice, Science Subcommittee (3/31/2016)--Page 1*



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its support for mathematics, science, and engineering in enabling a strong U.S. economy, workforce, and society.

Today, we submit this testimony to ask you to continue your support of NSF in FY 2017 and beyond. In particular, we join with the research and higher education community and request that you provide NSF with \$8 billion.

As we are reminded every day, the nation's economic strength, national security, and public health and welfare are being challenged in profound and unprecedented ways. Addressing these challenges requires that we confront fundamental scientific questions. Computational and applied mathematical sciences, the scientific disciplines that occupy SIAM members, are particularly critical to addressing U.S. competitiveness and security challenges across a broad array of fields: medicine, engineering, technology, biology, chemistry, computer science, and others. SIAM recognizes the challenging fiscal situation; however, we also face an "innovation deficit," the widening gap between the actual level of federal government funding for research and what the investment needs to be if the U.S. is to remain the world's innovation leader. Federal investments in mathematics, science, and engineering remain crucial as they power innovation and economic growth upon which our economy and fiscal health depend.

#### **National Science Foundation**

NSF provides essential federal support for applied mathematics and computational science, including more than 60 percent of all federal support for basic academic research in the mathematical sciences. Of particular importance to SIAM, NSF funding supports the development of new mathematical models and computational algorithms, which are critical to making substantial advances in such fields as neuroscience, energy technologies, genomics, analysis and control of risk, and nanotechnology. In addition, new techniques developed in mathematics and computing research often have direct application in industry. Modern life as we know it – from search engines like Google to the design of modern aircraft, from financial markets to medical imaging – would not be possible without the techniques developed by mathematicians and computational scientists. NSF also supports mathematics education at all levels, ensuring that the next generation of the U.S. workforce is appropriately trained to participate in cutting-edge technological sectors and that students are attracted to careers in mathematics and computing.

Below are highlights of the main budgetary and programmatic components at NSF that support applied mathematics and computational science.

#### **NSF Division of Mathematical Sciences**

The NSF Division of Mathematical Sciences (DMS) in the Directorate for Mathematical and Physical Sciences (MPS) provides the core support for all mathematical sciences. DMS supports areas such as algebra, analysis, applied mathematics, combinatorics, computational

*Testimony for the House Appropriations Committee – Commerce, Justice, Science Subcommittee (3/31/2016)–Page 2*






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mathematics, foundations, geometry, mathematical biology, number theory, probability, statistics, and topology. In addition, DMS supports national mathematical science research institutes; infrastructure, including workshops, conferences, and equipment; and postdoctoral, graduate, and undergraduate training opportunities.

The activities supported by DMS and performed by SIAM members, such as modeling, analysis, algorithms, and simulation, provide new ways of obtaining insight into the nature of complex phenomena, such as infectious diseases, financial transaction systems, terrorist networks, and designer materials. ***SIAM strongly urges you to provide at least \$6.425 billion for Research and Related Activities at NSF to enable funding for DMS at the President's proposed level of \$249.2 million. This funding would enable critical support for early career researchers and would help reverse the damaging cuts of recent years to enable essential mathematical research and workforce development programs.***

Investment in DMS is critical because of the foundational and cross-cutting role that mathematics and computational science play in sustaining the nation's economic competitiveness and national security, and in making substantial advances on societal challenges such as energy, the environment, and public health. NSF, with its support of a broad range of scientific areas, plays an important role in bringing U.S. expertise together in interdisciplinary initiatives that bear on these challenges. DMS has traditionally played a central role in such cross-NSF efforts, with programs supporting the interface of mathematics with a variety of other fields. SIAM endorses DMS participation in NSF-wide initiatives such as Data for Scientific Discovery and Action (D4SDA), Risk and Resilience, Cyber-enabled Materials and Manufacturing for Smart Systems (CEMMSS), and Understanding the Brain (UtB), to develop mathematical and computational tools that enable progress on these challenges. SIAM also supports DMS in its role as leader and coordinator of MPS's participation in the crosscutting Optics and Photonics initiative. SIAM additionally applauds DMS's new effort to engage mathematical scientists broadly in national initiatives through the Mathematical Sciences Innovation Incubator, which enables DMS cooperation on a broad array of programs and initiatives to spur new collaborations between mathematical scientists and researchers in other fields.

#### **NSF Division of Advanced Cyberinfrastructure**

Work in applied mathematics and computational science is critical to enabling effective use of the rapid advances in information technology and cyberinfrastructure. Programs in the NSF Division of Advanced Cyberinfrastructure (ACI) in the Directorate for Computer and Information Science and Engineering (CISE) focus on providing research communities access to advanced computing capabilities to convert data to knowledge and increase our understanding through computational simulation and prediction.



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***SIAM again strongly urges you to provide at least \$6.425 billion for Research and Related Activities to enable funding for ACI at the President's proposed funding level of \$236.3 million. This investment in computational resources and science is needed to solve complex science and engineering problems. In addition, SIAM strongly endorses ACI's role as steward for computational science across NSF, strengthening NSF support for relevant activities and driving universities to improve their research and education programs in this multidisciplinary area.***

SIAM strongly supports ACI data activities, including data infrastructure, tools, and repositories, as well as the NSF-wide D4DSA. The explosion in data available to scientists from advances in experimental equipment, simulation techniques, and computer power is well known, and applied mathematics has an important role to play in developing the methods and tools to translate this shower of numbers into new knowledge. The programs in ACI that support work on software and applications for the next generation of supercomputers and other cyberinfrastructure systems are also very important to enable effective use of advances in hardware, to facilitate applications that tackle key scientific questions, and to better understand increasingly complex software systems.

SIAM strongly endorses NSF's role in the government-wide National Strategic Computing Initiative (NSCI), which aims to position the nation to meet critical national security needs, fully leverage computing technology for economic competitiveness and scientific discovery, and position the U.S. for sustained technical leadership. Together with MPS, ACI will co-lead NSF's participation in NSCI by facilitating the development of resilient, reusable, and durable scientific software architectures to advance discovery through scientific computation.

### **Supporting the Pipeline of Mathematicians and Scientists**

Investing in the education and development of young scientists and engineers is a critical role of NSF and a major step the federal government can take to ensure the future prosperity and welfare of the U.S. SIAM strongly supports significant funding for the Graduate Research Fellowship (GRF) program and the Faculty Early Career Development (CAREER) program. Strong investments in these programs will support thousands of new graduate students, which will help develop the country's next generation of scientists.

Before reaching the graduate and early career stage, young mathematicians and scientists gain critical interests and skills as undergraduates. SIAM supports efforts by NSF to improve undergraduate science, technology, engineering, and mathematics (STEM) education, and notes the key role that mathematicians play in training for these fields.

### **Conclusion**

We would like to conclude by thanking you again for your ongoing support of NSF that enables the research and education communities it supports, including thousands of SIAM members, to



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undertake activities that contribute to the health, security, and economic strength of the U.S. NSF needs sustained annual funding to maintain our competitive edge in science and technology, and therefore we respectfully ask that you continue robust support of these critical programs in FY 2017.

We appreciate the opportunity to provide testimony to the Committee on behalf of SIAM. SIAM looks forward to providing any additional information or assistance you may ask of us during the FY 2017 appropriations process.



SOCIETY for  
INDUSTRIAL and  
ORGANIZATIONAL  
PSYCHOLOGY

SCIENCE FOR A SMARTER WORKPLACE

**Official Written Testimony in Support of  
Fiscal Year 2017 National Science Foundation Funding**

Submitted to the House Subcommittee on Commerce, Justice, Science, and Related Agencies;  
Committee on Appropriations  
United House of Representatives  
February 29, 2016

Submitted by

Steve Kozlowski, President, Society for Industrial and Organizational Psychology  
Dave Nershi, Executive Director, Society for Industrial and Organizational Psychology

On behalf of the Society for Industrial and Organizational Psychology (SIOP), we are pleased to provide this written testimony to the House Appropriations Subcommittee on Commerce, Justice, and Science, and Related Agencies for the official record. **SIOP urges the Subcommittee to provide \$8 billion for the National Science Foundation (NSF), including strong support for the Directorate for Social, Behavioral, and Economic Sciences (SBE), in the fiscal year (FY) 2017 appropriations process.**

SIOP and its members recognize and appreciate the challenging fiscal environment in which we, as a nation, currently find ourselves; however, we believe strongly that federal investment in social and behavioral science research directly impacts the U.S. economy, national security, and the health and well-being of Americans.

Through SBE, NSF supports basic research to develop a scientific evidence base for improving the performance, effectiveness, management, and development of organizations. The methods, measurements, and theories developed through this federal investment enhance business practices, policy-making, and interprofessional collaboration. The evidence base derived from basic research in the science of organizations is applied across sectors and disciplines. For example, the National Aeronautics and Space Administration (NASA) leverages the evidence base of organizational science for team selection and training for agency missions to mitigate team member conflicts and promote team cohesion.

Additionally, new pressures to address privacy, performance, and safety in the workplace have further expanded the need for federal investment in social and behavioral science research, especially industrial and organizational (I-O) psychology, emphasizing the importance of the entire work system, in addition to the individual. Recent events and conditions, including violence and incivility in the workplace, challenging economic circumstances, subtle and formal discrimination based on sexual orientation and gender, coping with talent shortages in technical



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jobs, and the implementation of new governmental regulations, catalyze the development and application of new methodologies for studying how people think and behave in the workplace.

With funding assistance from NSF, as well as other federal agencies, the field of I-O psychology has developed data-driven methods to predict successful teams, address workplace dysfunction, improve the work experience of individuals, and enhance job performance and employee engagement. Using this rich knowledge and understanding has informed and maximized private companies, as well as the public workforce. Continued federal support for I-O psychology keeps the knowledge in the public domain and enhances shared workplace efficiency and understanding of worker well-being at all levels. Other applications of I-O psychology include: improving airline safety through Crew Resource Management, transitioning veterans and service members to civilian jobs, managing age diversity in the workplace, and mitigating the impact of furloughs on the federal workforce, among others.

SIOP is a community of more than 8,000 members worldwide with the common interest in promoting the science, practice, and teaching of I-O psychology to enhance human well-being and performance in organizational and work settings. SIOP provides a platform for scientists, academics, consultants, and practitioners to collaborate, implement, and evaluate cutting-edge approaches to workplace challenges across sectors.

**Given NSF's critical role in supporting fundamental research and education across science and engineering disciplines, SIOP supports an overall FY 2017 NSF budget of \$8 billion. SIOP requests robust support for the NSF SBE Directorate, which funds important research studies, enabling an evidence base, methodology, and measurements for improving organizational function, performance, and design across sectors and disciplines.**

Thank you for the opportunity to offer SIOP's support for NSF. Please do not hesitate to contact SIOP should you have any questions. Additional information is also available at [www.siop.org](http://www.siop.org).



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Established in 1978 by

Silicon Valley Leadership Group, Peter Leroe-Muñoz, Vice President, Technology & Innovation

**Members of the House Committee on Appropriations Subcommittee on Commerce, Justice, Science, and Related Agencies:**

The *Silicon Valley Leadership Group* represents nearly 400 of Silicon Valley's most respected companies and employers on issues and programs that affect the economic strength and technological dominance of our country. The combined market value of member companies tops \$6 trillion. Robust federal funding of Scientific Research is one of our top priorities, because this critical initial public investment powers American innovation.

### ***Research grants drive our economy***

Government-funded research is our nation's economic fuel, driving discoveries and new technologies, which can be commercialized to enter the marketplace. This is how companies and entire industries are launched, and new jobs created. In fact, some of the most successful American companies in our Valley were born out of federally-funded research, including BD Biosciences (cytometry at NIH), Trimble (geolocation at NSF), and Intuitive Surgical (robotics at DARPA).

### ***Restore fundamental scientific research funding***

Despite its importance, scientific and bio-medical research funding have been on the chopping block for the past few years. We applaud the latest two-year budget agreement which increases spending by \$50 billion in 2016 and \$30 billion in 2017. The Budget Control Act of 2011, and the attendant sequestration efforts, led to a series of indiscriminate funding cuts which have shackled scientific and medical discovery. Now is the time to reinvest in research. Many companies in our region are relying on prospective discoveries to ensure their future market success—phenomena such as new materials for printable batteries, the ability to harness big data, drug delivery, and personalized medicine. We urge Congress to also support programs that fund higher education, as our high-skilled workforce of the future depends upon it.

If the United States allows such critical investments in scientific research and higher education to languish, other nations and our global competitors, will soon surpass us, as they increase investments in their own higher education and research and development systems, ensuring their economies grow.

We ask you to continue to provide robust support for research and higher education. We want to do all we can to ensure America's global preeminence in innovation, commercial potential, job creation, and quality of life. We urge the members of the House and Senate who are negotiating funding for FY2017 and beyond, to put an end to sequestration, enable investments in scientific research, and restore the dividends these investments produce for our economy and society.

Peter Leroe-Muñoz  
Vice President, Technology & Innovation Policy  
Silicon Valley Leadership Group



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Testimony to the House Committee on Appropriations  
Subcommittee on Commerce, Justice,  
Science, and Related Agencies

Lisa Nerenberg, Executive Director, California Elder Justice Coalition

On behalf of the California Elder Justice Network (CEJC), an interdisciplinary network of 50 coalitions, public and private agencies, and professionals, we urge the Committee to ***maintain the Crime Victims Fund at \$2.36 billion or higher*** so that previously unserved and underserved groups, including victims of elder abuse and financial crimes, have access to the critical services they need to treat the physical and emotional impact of these crimes; seek justice through the criminal justice process; seek shelter; prevent evictions and homelessness; remain independent; and reduce the risk of re-victimization.

The Crime Victims Fund, also called the VOCA Fund, was created by the bipartisan Victims of Crime Act of 1984 as a mechanism to fund compensation and services for victims of crime through fines and penalties on federal criminal offenders. VOCA funds are disbursed to the states to provide *Victim Compensation*, which compensates individual victims for crime-related expenses like medical care, mental health counseling, shelter, and legal assistance; and *Victim Assistance*, which provides grants to agencies to provide direct services such as these and more to victims.

Historically, however, few victims of elder abuse or financial abuse have benefited from VOCA programs. In response, the federal Office for Victims of Crime (OVC), which administers VOCA programs, has designated older crime victims as an underserved population and requires states to explore and respond to the needs of underserved groups.

In 2015 Congress raised the amount of VOCA funds released for FY 2015-16 to \$2.36 billion (from about \$700-\$800 million in recent years), a level approximately equal to the amount deposited into the fund from criminal fines and penalties collected in the previous year. The increase provided an unprecedented opportunity to extend critical services to previously unserved or underserved groups.

The increased release of VOCA funds in FY 2015 has had enormous impact in California. Last summer, our State VOCA program administrators at the California Office for Emergency Services (OES) convened a VOCA Steering Committee to set priorities, develop a strategic plan for meeting underserved victims' needs, and oversee the development of new underserved victim assistance grant programs including services to abused elders. This included \$4 million for Multidisciplinary Teams to provide direct victim services to older victims as well as other new grant programs that provide shelter, legal assistance, financial

counseling, mental health, and other services that can benefit abused elders, victims of financial crimes, victims with disabilities, LGBT victims, victims of trafficking, and others. The new programs further foster collaboration among victim advocates, law enforcement and Adult Protective Services.

Although Congress' proposed budget for 2017 increased VOCA funds even further than those in 2016, President Obama's budget for 2017 proposes reduced VOCA funding from 2015-16 levels, potentially setting back efforts to direct more VOCA funds to help victims who are elderly, persons with disabilities, LGBT victims, Native Americans, and other underserved groups.

Reducing the fund is particularly disappointing in light of the memo released by the White House during the 2015 White House Conference on Aging, in which the administration emphasized the need to use VOCA funds to support social and legal services to underserved victims, including elder victims of abuse, financial exploitation, fraud, and neglect by the end of the year.

The problem of elder abuse, neglect and exploitation is growing while the federal response to it is not. Today, it is estimated that one out of every ten persons over the age of 60 is a victim of elder abuse. The consequences can be devastating. Victims of elder financial abuse lose almost \$3 billion each year, including entire life savings. Victims have a 300% higher than average risk of premature death. Abuse and exploitation may further compromise health and independence. Financial exploitation and fraud results in the loss of homes, pension income, and life savings. Victims are four times more likely to go into nursing homes, one in ten financial abuse victims turn to Medicaid as a direct result exploitation.

Victims of financial crimes and exploitation have particularly complex needs as illustrated by the following case example.

*Randy, a Denver, Colorado man with a developmental disability was living in a group home when he had his identity stolen. The crime was discovered when the home administrator got a notice that Randy's SSDI, Medicaid and other benefits were being terminated because he had an income in another state. Local police then arrived to arrest Randy for a felony sex offense.*

*Although law enforcement was quickly able to establish that Randy wasn't employed and hadn't committed the crime, that was only the beginning. A criminal search showed that Randy was wanted for crimes in other states. Several people were working under his Social Security number and someone had opened new credit accounts in his name.*

*Helping Randy involved getting his Social Security records changed, reinstating benefits, and "flagging" his case so that the benefits wouldn't be cancelled again. This involved working with the Department of Labor and the IRS. Those working with Randy needed to get credit reports, contact creditors and credit reporting agencies, file police reports in multiple states where the frauds occurred, record challenges in those states to correct Randy's criminal history, and have his ID removed*



*from the sex offender registry. There was also Randy's mental state to consider. The experiences were very upsetting to him; he was having nightmares about his time at the jail and afraid to leave the home, fearing he might not be allowed back. Fortunately, Randy had a case manager who was able to assist him access services. Few older victims don't. Even if they do, it's unlikely that they're equipped to address financial crime victims' needs.*

Among the services needed by elderly victims and victims of financial abuse that are currently not available or are in short supply are:

- Shelters that accept adults who need help with daily activities, personal care, or supervision.
- Short-term home care, and short-term stays in residential care facilities.
- Back rent or first month's rent to avoid homelessness when crimes lead to eviction. Moving costs and other emergency funds may also be needed, including medications and food.
- Counseling to address trauma, anxiety disorders, depression, and safety planning; and to prevent re-victimization.
- Support groups led by licensed clinician and mental health counseling programs to assist victims of financial exploitation including scams.
- Specialized case management for short and long term victim needs.
- Legal assistance, including advocacy with creditors, addressing the tax implications resulting from losses, assistance with bankruptcy, restitution recovery, and securing protective orders.
- Assistance filing police reports, transportation to court, and filing fees.
- Home repair funds for replacing locks, repairing damage, and eliminating health and safety hazards.
- Medical costs related to abuse.
- Payment for utilities that are shut off due to non-payment related to exploitation.
- Financial counseling and advocacy to address crime related problems (assist victims restructure budgets and debt; access insurance, public assistance, and other benefits; address bankruptcy and banking issues; complete financial impact statements; settle estates; handle guardianship concerns; advocate with debt collectors, landlords, and the IRS; prevent foreclosure, garnishment, and nursing home evictions.
- Daily money management to prevent future exploitation.
- Assistance with transportation, particularly to medical and court/legal appointments

Increased VOCA spending is needed to extend these services to the elderly and other underserved victims. Older victims, including victims of financial crimes, are frequent targets of federal white collar crime perpetrators. It is, therefore, only fitting that elderly crime victims receive their fair share of VOCA funds, a substantial portion of which comes from these criminals.

Statement by  
The Planetary Society

Prepared by Casey Dreier, Director of Space Policy, The Planetary Society

for the

Committee on Appropriations  
Subcommittee on Commerce, Justice, Science, and Related Agencies  
United States House of Representatives  
Hearing: NASA's FY 2017 Budget Request

We are requesting \$20.3 billion for the National Aeronautics and Space Administration in FY2017, including at least \$1.71 billion for the Planetary Science Division.

Humankind is on the cusp of a scientific revolution. For the first time in history, we have the ability to actively search for new biology in habitable environments beyond Earth. Whether or not we choose to pursue this opportunity will be a legacy of our generation.

Mars and Europa are two of the most intriguing astrobiological destinations in our solar system and are proposed as the top two most important destinations for flagship missions in the National Academies' *Visions and Voyages for Planetary Science* decadal survey report. The ancient habitable environment of Mars may have preserved signs of life, should it have ever existed there. Europa, with its ocean of liquid water, abundance of necessary chemicals and nutrients, and heat created from interaction with Jupiter's enormous gravitational pull, is a prime candidate for an environment capable of supporting life now.

The search for life isn't the only reason to explore. Knowledge of our solar system's origins and evolution is revealed through the information returned by robotic spacecraft. The extremes in climate represented by Venus and Mars can help us understand changes to our own climate. And the act of exploration itself is a sign of an open, curious culture committed to the pursuit of knowledge. Recent triumphs in exploration by NASA have delighted the public with scientific wonders in our solar system, revealing active glaciers on Pluto, strange bright spots on the asteroid Ceres, flowing water-brines on Mars, and the seasons on Titan, to name only a few. NASA has achieved these discoveries by maintaining steady investment in its Planetary Science Division in previous decades, though in recent years it has been subject to cuts proposed by the White House, though mitigated regularly by Congress.

A healthy and vibrant space exploration program is an excellent investment to energize, engage, and inspire the next generation of scientists, engineers, educators, as well as our citizens. Space missions contribute to thousands of high-tech jobs in the aerospace industry, at research laboratories, and in universities around the country. They stimulate the best and brightest with interesting and meaningful scientific and technical challenges that make our nation stronger and more competitive. NASA's exploration missions have repeatedly demonstrated their power in engaging and exciting the public imagination.

The human spaceflight efforts of NASA also face a critical decision point that will determine our legacy to future generations. Specifically, how NASA will extend human exploration beyond Earth orbit. **The Planetary Society strongly supports Mars as the destination for human exploration, and has encouraged NASA to develop a clear, executable, and affordable plan to achieve this goal over the next several decades.** An orbit-first architecture, where humans would first orbit Mars in 2033 and then land later in the decade, is one highly promising concept that could fit within the current budget with inflationary growth. NASA's new start on a cis-lunar habitat, included in the FY2017 request, is a critical step on the path to humans on Mars.

The Planetary Society notes that the Administration's FY17 budget request for NASA is a step in the right direction compared to recent years. However, the Society is disappointed that the proposal falls short, by roughly \$260 million, of the level Congress provided last year, and singles out the Planetary Science Division as the lone science division facing cuts in 2017. These numbers look even worse without the unlikely addition of new "mandatory" spending sources proposed in the budget.

In addition to maintaining growth in the other science divisions, **we urge the committee to restore the Planetary Science Division to FY2016 levels plus growth for inflation—to at least \$1.71 billion.**

While there are positive aspects of the Administration's request, a concern for the Society is the proposed delay and overall lack of commitment in the budget for the mission to Europa. Last year, Congress made clear that NASA was to move forward with a Europa multiple flyby spacecraft and a lander that meets the science goals of the decadal survey, along with a 5-year budget plan to support a 2022 launch on the Space Launch System (SLS). However, the Administration's plan ignores the Congressional mandate. Instead, NASA proposes to cut funding for Europa in FY17 by \$125 million and delay the mission until the late 2020s. **The Society strongly supports the Europa**

**approach spelled out in the FY16 Appropriations Act and urges the committee to stay the course.**

NASA's infrastructure here on Earth, particularly the Deep Space Network (DSN), is crucial for the successful exploration of our solar system and the cosmos. **We are concerned that recent budget cuts to the DSN will impact the reliability of the network and potentially impact the safety of our deep space assets.** Plutonium-238 infrastructure is well-funded in the request, and we thank the Administration and Congress for the continued support for restoring this critical capability.

We are pleased to see that the Administration included funds for extended operations of all ongoing planetary science missions, though we note that the Mars Opportunity rover, Mars Express, and Mars Odyssey missions depend on new mandatory funding sources for their continued operations.

The Society strongly supports a robust Mars exploration program, both human and robotic. The upcoming Mars 2020 rover is a critical step toward the scientific community's top priority of Mars sample return, as well as an important technology demonstration for entry, descent, and landing and in-situ resource utilization experiments that will inform future human exploration. Among its many scientific goals, the Mars 2020 mission will collect and store a cache of samples on the surface of the red planet. However, NASA has yet to define a plan for follow-on missions to retrieve these samples and return them to Earth, or even how it will continue to support ground assets with a future scientific/telecommunications orbiter. **We urge the committee to press NASA to clarify its plan to return these martian samples to Earth in the 2020s.**

The Society is concerned that proposed cuts to the Space Launch System (SLS) program could impact the availability of the new rocket. SLS is the foundation of the transportation system for sending humans to Mars, as well as a key enabler for a sustained outer planets exploration program, to Europa, Enceladus, and other destinations. Adequate funding should be provided to maintain SLS on the most efficient development timeline.

Should Congress continue the budgetary momentum it has sustained for NASA in recent years, all major programs in human spaceflight—SLS, Orion, and Commercial Crew—could be funded at needed levels while maintaining the growth the science divisions and restoring Planetary Science to \$1.71 billion in FY2017. This is a growth of 5%, the same as in FY2016, bringing NASA's top-line to \$20.3 billion.

With the upcoming transition in Presidential Administrations, we urge Congress and the Administration to build on the broad bipartisan support for the nation's space program and set NASA on a steady course forward. We believe humankind is on the brink of revolutionary discoveries, if we choose to make it happen.



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March 28, 2016

**Organization Submitting Testimony:**

VOR, *Speaking out for people with intellectual and developmental disabilities*

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**Testimony Prepared For:**

Subcommittee on Commerce, Justice, Science and Related Agencies, U.S. House  
Committee on Appropriations ([CJ.Approp@mail.house.gov](mailto:CJ.Approp@mail.house.gov))

**Regarding: FY 2017 written testimony for the record**

U.S. Department of Justice (DOJ)

**Requesting:** Conditions consistent with the *Olmstead* decision on federally-funded DOJ court actions that involve the residents of Medicaid-licensed Intermediate Care Facilities (ICFs/IID) or other specialized Medicaid-licensed facilities for persons with intellectual and developmental disabilities (I/DD).

**I. Introduction**

VOR is a national nonprofit advocacy organization advocating for high quality care in a full continuum of residential options and human rights for all people with intellectual and developmental disabilities (I/DD). We would like to express our gratitude to Chairman Culberson, Acting Ranking Member Honda and the members of the Subcommittee for their past actions and for this opportunity to submit testimony. VOR's members look forward to working with the Subcommittee and its staff to protect the civil rights of our most fragile citizens.

**II. Summary: Legislative Language Needed to Enforce Individual Choice  
According to the U.S. Supreme Court's *Olmstead* Decision**

VOR believes that the DOJ Civil Rights Division's "*Olmstead* enforcement" activities that are designed to close Medicaid-licensed facilities (such as ICFs/IID) violate the Americans with Disabilities Act (ADA) and *Olmstead* by failing to respect individual choice. Since 2009, DOJ has filed more than 45 *Olmstead* enforcement actions in 25 states, overriding the wishes of the individuals with I/DD and their families and legal guardians. The result has been that thousands of individuals with profound I/DD have been forced out of their ICF homes into communities that lacked the resources to care for them. Too often, these most vulnerable individuals have suffered significant harm, including death, and emotional hardship.

This is not an issue of first impression for the Subcommittee. VOR raised the same issues in the 113<sup>th</sup> Congress. In response, this Subcommittee included the following report language in H. Rep. 113-448 to accompany H.R. 4660 (May 15, 2014) at pp. 44-45:

*Deinstitutionalization - The Committee notes the nationwide trend towards deinstitutionalization of patients with intellectual or developmental disabilities in favor of community based settings. The Committee also notes that in *Olmstead v. L.C.* (1999), a majority of the Supreme Court held that the Americans with Disabilities Act does not condone or require removing individuals from institutional settings when they are unable to handle or benefit from a community based setting, and that federal law does not require the imposition of community-based treatment on patients who do not desire it. The Committee strongly urges the Department [of Justice] to factor the needs and desires of patients, their families, and caregivers, and the importance of affording patients the proper setting for their care, into its enforcement of the Americans with Disabilities Act.*

In subsequent negotiations with the Senate, the Report language was weakened, and Congress included the following language relating to DOJ actions in the Conference Report to accompany H.R. 83, Consolidated and Further Continuing Appropriations Act, 2015 (Division B, Commerce, Justice, Science and Related Agencies) (Pub.L. 113-235, December 16, 2014):

*"Deinstitutionalization.-There is a nationwide trend towards deinstitutionalization of patients with intellectual or developmental disabilities in favor of community-based settings. The Department [of Justice] is strongly urged to continue to factor the needs and desires of patients, their families, caregivers, and other stakeholders, as well as the need to provide proper settings for care, into its enforcement of the Americans with Disabilities Act."*

The FY 2016 Omnibus Appropriations Act included the same language with respect to Health and Human Services programs that pursue similar legal actions to close ICF/IID homes and a provision requiring advance notice of a lawsuit. **VOR appreciates the Committee's recognition of the problem, but more needs to be done to identify a solution.**

Therefore, VOR requests inclusion of language that expressly **prohibits the use of appropriations by DOJ to bring a lawsuit to close a Medicaid-licensed facility for persons with I/DD, unless the program has first notified the affected individuals and their legal guardians and DOJ has submitted reports to the Committee showing how it respects the wishes of the families and how the action would provide comparable care of the individuals with I/DD in the community in close proximity to their families and their support community.** Suggested language to accomplish these purposes is included at the end of the testimony.

### **III. DOJ's *Olmstead* Enforcement Activities are Contrary to *Olmstead***

DOJ's "*Olmstead* enforcement" actions seem to violate the letter and spirit of the *Olmstead* decision. In particular, the Supreme Court in *Olmstead* established the right to community-based housing and care *only* when three conditions were met: (1) "the State's treatment professionals have determined that community placement is appropriate," (2) "transfer is not opposed by the affected individual," and (3) "the placement can be reasonably accommodated, taking into account the resources available to the State and the needs of others with mental disabilities." [*Id.*, at 587]. The Court expanded on its holding as follows:

"We emphasize that nothing in the ADA or its implementing regulations condones termination of institutional settings for persons unable to handle or benefit from community setting . . .

Nor is there any federal requirement that community-based treatment be imposed on patients who do not desire it.” [527 U.S. 581, 601-02] See, also, Justice Kennedy’s concurring opinion, “It would be unreasonable, it would be a tragic event, then, were the Americans with Disabilities Act of 1990 (ADA) to be interpreted so that states had some incentive, for fear of litigation to drive those in need of medical care and treatment out of appropriate settings with no assistance and supervision.”) [527 U.S. at 610]

**It is not appropriate for DOJ to substitute its ideological view that all residents of ICFs/IID and similar facilities are better served in community placements for the Supreme Court’s specific tests for community placement, which include the right of individuals or their legal guardians (on behalf of incapacitated individuals) to choose to remain in an ICF.**

Yet, DOJ has pursued *Olmstead* investigations and actions against states with the express intent of “Community Integration for Everyone,” have rarely consulted with families and legal guardians, and have led to settlements requiring deinstitutionalization without regard to assessments of individual needs and choices. U.S. District Court Judge J. Leon Holmes recognized both the illegality and absurdity of such actions in his order dismissing DOJ’s case against the State of Arkansas:

“Most lawsuits are brought by persons who believe their rights have been violated. Not this one. The Civil Rights Division of the Department of Justice brings this action on behalf of the United States of America against the State of Arkansas and four state officials in their official capacities alleging that practices at Conway [ICF/IID] violate the rights of its residents guaranteed by the Fourteenth Amendment, the Americans with Disabilities Act, and the Individuals with Disabilities Education Act. All or nearly all of those residents have parents or guardians who have the power to assert the legal rights of their children or wards. Those parents and guardians, so far as the record shows, oppose the claims of the United States. **Thus, the United States is in the odd position of asserting that certain persons’ rights have been and are being violated while those persons – through their parents and guardians – disagree.**” [*United States v. Arkansas* (June 8, 2011, dismissal order) (emphasis added)].

In Virginia, families and legal guardians were conspicuously absent from the long list of stakeholders interviewed by DOJ prior to settlement and families spent \$115,000 to overcome the opposition of DOJ and Virginia to secure intervention. [*United States v. Virginia*, (3:12cv59 – JAG, May 9, 2012)]. DOJ proceeded with the case, even though surveys at the ICFs/IID found that close to 100% of the families opposed having their loved ones moved into the community

In *United States v. Georgia* (2010), the Department did not consult with families and legal guardians before entering a settlement that requires the closure of Georgia’s ICFs/IID and forces all residents from these homes. The Settlement does not provide families and legal guardians any decision-making authority except in the context of community transition. As discussed below, significant harm to affected individuals has followed transitions in Georgia and other states.

#### **IV. The Real World Effects of Forced Deinstitutionalization: Widespread, Well-Documented Human Tragedies for the Most Severely Disabled**

There is a national trend towards deinstitutionalization, whereby individuals are encouraged and sometimes forced to move out of Medicaid-licensed care facilities and into community residential



settings. For many individuals with I/DD, their new homes give them more control over their lives. However, the I/DD community is not monolithic. A small percentage function at a very low level, often that of a 6-month old, and may also have severe behavioral and/or medical problems. These individuals require legal guardians (usually family members) to make decisions for them. An overwhelming number of them favor ICF/IID care for its greater safety and health. Historically, DOJ has failed to consult the guardians and acted against their wishes.

VOR and the families we represent are deeply concerned by the many reported outcomes of abuse, neglect and death of individuals with I/DD in community settings. Higher mortality rates in Virginia, Nebraska, Tennessee, and Georgia, have been documented in the wake of DOJ's deinstitutionalization settlement enforcement:

- In **Virginia**, Dr. Robert Anthony documented a doubling of the risk of mortality for those individuals who left a state ICF/IID relative to those who stayed.
- In **Nebraska** (*U.S. v. Nebraska*), 94 individuals with profound I/DD (27%) who were transferred from a state ICF/IID pursuant to a DOJ settlement agreement subsequently died. A subset of "medically fragile" individuals died at a much higher rate, 43%, after transition from the ICF/IID.
- In **Tennessee** (*U.S. v. Tennessee, 1992 and 1996*<sup>1</sup>), DOJ lawsuits resulted in the closure of Arlington Developmental Center (an ICF/IID) in 2010, and the downsizing Clover Bottom, Greene Valley, and Nat T. Winston developmental centers. **Deaths among people with intellectual disabilities released from institutions nearly doubled between 2009 and 2013.** Court-appointed monitors noted that they "are 'deeply concerned with the number of deaths, the age of the (individuals) at death, circumstance surrounding the deaths, and lack of comprehensive review and analysis.'" ["When disabled leave facilities, it's not all good," *Tennessean* (Feb. 10, 2014) (**emphasis added**)]. A 2013 State Comptroller's audit also reported lack of access to adequate medical and dental care, incarcerations, hundreds of reports of abuse, and neglect and exploitation.
- In **Georgia**, a 2010 Justice Department Settlement Agreement with the State calls for the transition of nearly 1,000 individuals with I/DD and the closure of all state-operated ICFs/IID and the transition of 9,000 individuals with mental illness from facility-based care. On January 27, 2016, relying on State documents, the *Augusta Chronicle* reported that of 503 residents who moved from ICFs into the community, 79 have died. That rate is far higher than the mortality rate in the ICFs. Moreover, according to an independent consultant, Georgia only investigated 38 of the 79 deaths, and the cause of death for 29 patients was listed as "unknown." (*Georgia faces contempt hearing in moving developmentally challenged patients to community-based care*). Thousands of hospitalizations and hundreds of reports of abuse, elopements, and interactions with law enforcement have also been reported in each of its Annual Quality Management Reports for 2013 and 2014.

**Most tragic is that these deaths and other tragic outcomes (hospitalizations, abuse, neglect and injuries) were predictable. They've happened time and again in a majority of states.**  
["Widespread Abuse, Neglect and Death in Small Settings Serving People with Intellectual

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<sup>1</sup> These cases pre-dated the 1999 Olmstead decision; DOJ filed these actions under its Civil Rights for Institutionalized Persons Act (CRIPA) authority.

Disabilities," VOR (Revised March 2015)]. In 2013, U.S. Senator Chris Murphy (D-CT) cited "the alarming number of deaths and cases of abuse of developmentally disabled individuals in group homes," and pointed to the "prevalence of *preventable* deaths at privately run group homes across this nation," in his request for an investigation by HHS' Inspector General.

Notably, Samuel Bagenstos, a former DOJ Civil Rights Division Principal Deputy Assistant Attorney General and key litigator in "Olmstead enforcement" deinstitutionalization cases points to the inadequacy of community-based placements in deinstitutionalization actions:

"It should not be surprising that the coalition of deinstitutionalization advocates and fiscal conservatives largely achieved their goal of closing and downsizing institutions and that deinstitutionalization advocates were less successful in achieving their goal of developing community services." [Bagenstos, Samuel R., *The Past and Future of Deinstitutionalization Litigation*, 34 Cardoza L. Rev. 1, 21 2012)].

## V. Conclusion and Solution

Given these concerns, VOR urges the Subcommittee to adopt the bill language below that would **prohibit the use of appropriated funds for any DOJ action to close an ICF/IID, unless DOJ has first notified the affected individuals and their legal guardians and DOJ has submitted reports to the Committee showing how it respects the wishes of the families and provides comparable care of the individuals with I/DD in the community in close proximity to their families and their support community.**

## VI. Requested Legislative Language

"Provided further, That none of the funds made available under this heading may be used by the Department of Justice to initiate or continue to pursue any legal action in a Federal or State court on behalf of an individual or group of individuals with a developmental disability (as defined in section 102(8)(A) of the Developmental Disabilities and Assistance and Bill of Rights Act of 2000 (20 U.S.C. 15002(8)(A))) that has as the requested remedy or likely result the closure of a Medicaid-licensed facility for people with intellectual or developmental disabilities, unless (1) reasonable public notice of the action has been provided to such individuals (or, in the case of mental incapacitation, the legal guardians who have been specifically awarded authority by the courts to make healthcare and residential decisions on behalf of such individuals) who are affected by such action, within 90 days of instituting such legal action, which informs such individuals (or such legal guardians) of their legal rights and how to exercise such rights consistent with current Federal Rules of Civil Procedure; and (2) the Department of Justice has submitted a report that indicates how it determines and respects the needs and desires of patients, their families and caregivers before taking any action, in accordance with the *Olmstead* decision, and what provisions it includes in any agreement with a State to assure that community residences that provide comparable care are in place before such individuals are moved, and that such residences are located near the resident's family and support community."

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